User's Manual

KODAK
Professional DCS 465
Digital Camera Back

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WARRANTY

KODAK Professional DCS 465 Digital Camera Back

THIS WARRANTY APPLIES TO EQUIPMENT PURCHASED IN THE UNITED STATES.

Warranty Time Period

Kodak warrants your KODAK Professional DCS 465 Digital Camera Back to be free from malfunctions and defects in both materials and workmanship for six months from the date of purchase.

Warranty Repair Coverage

If this equipment does not function properly during the warranty period, due to defects in either materials or workmanship, Kodak will, at its option, either repair or replace the equipment, without charge, subject to the conditions and limitations stated herein. Such repair service will include all labor as well as any necessary adjustments and/or replacement parts.

If replacement parts are used in making repairs, these parts may be remanufactured, or may contain remanufactured materials. If it is necessary to replace the entire system, it may be replaced with a remanufactured system. If it should become necessary to repair or replace a malfunctioning or defective system, the provisions of this warranty shall apply to the repaired or replaced system until the expiration of 30 days from the date of return, or until the end of the original warranty period, whichever is later.

Kodak will also provide telephone assistance during the warranty period.

Limitations

Warranty service will not be provided without return of the Warranty Registration card or dated proof of purchase. Please return the Warranty Registration card within 30 days of purchase.

As a condition of warranty service, before sending in your unit to the nearest service center for repair, you must first contact a Kodak representative for return authorization and instructions.

This warranty becomes null and void if, during shipment, you fail to pack your KODAK Professional DCS 465 Digital Camera Back in a manner consistent with the repacking instructions in an appendix.

This warranty does not cover the following: circumstances beyond Kodak's control; service or parts to correct problems resulting from the use of attachments, accessories or alterations not marketed by Kodak; unauthorized modifications or service; misuse; abuse; failure to follow Kodak's operating, maintenance, or repacking instructions; or failure to use Kodak supplied items (such as cables).

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In other countries, call your nearest Kodak representative.

If service is required, your Kodak representative will instruct you to return the unit to the nearest service center for repair and will issue a return authorization number.

When returning a KODAK Professional DCS 465 Digital Camera Back for repair, the unit shall be packed in its original packing materials according to the repacking instructions in an appendix. The enclosed problem report form (see Appendices) should also be completed and enclosed with the equipment. If the original packaging has been discarded or is not available, packing will be at the owner's expense.

Return of the repaired or replaced unit to the customer can be expected in five to seven days from the date the KODAK Professional DCS 465 Digital Camera Back arrives at the service center.

EASTMAN KODAK COMPANY

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Should you have any questions concerning this Agreement, you may contact Kodak in the United States at 1-800-23-KODAK (1-800-235-6325), in Canada at 1-800-GO-KODAK (1-800-465-6325), and in other countries through your nearest Kodak representative.

YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS. YOU FURTHER AGREE THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN US, WHICH SUPERSEDES ANY PROPOSAL OR PRIOR AGREEMENT, ORAL OR WRITTEN, AND ANY OTHER COMMUNICATIONS BETWEEN US RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

Important Safeguards and Precautions

The exclamation point in an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the equipment.

- **Read Instructions** — Read all the safety and operating instructions before operating the equipment.
- **Follow Instructions** — Follow all operating and use instructions.
- **Controls** — Adjust only those controls that are covered by the operating instructions.
- **Heed Warnings** — Heed all warnings on the equipment and in the operating instructions.
- **Retain Instructions and Packaging** — Retain the safety and operating instructions for future reference. Retain the packing case for use if the equipment needs to be shipped.
- **Handling** — Handle the equipment as you would any valuable camera. Handle the equipment with care, especially when the hard disk is running. Treat the imager as you would your best lens. Do not drop the equipment. Mishandling can damage the imager resulting in an expensive repair.
- **Accessories** — Do not place the equipment on an unstable cart, stand, bracket, or table. It can fall, causing serious injury to persons

and serious damage to the equipment. Use only with a stable cart, stand, bracket, or table.

- **Cleaning** — (Refer to chapter 9 for directions on cleaning the imager in the camera back.) Unplug the KODAK Professional DCS 465 Digital Camera Back (DCS 465 Camera Back) from its AC battery charger/adapter and from a computer. Be certain the camera back is off. Using a damp cloth, clean only the outside cabinet and the liquid crystal display (LCD) on the DCS 465 Camera Back. Do not use liquid cleaners or aerosol cleaners on the outside of the equipment.
- **Dust** — If you operate the camera back in environments with excessive dust levels, dust may accumulate on the imager in the camera back. (Refer to chapter 9 for directions on cleaning the imager in the camera back.)
- **CAUTION**: **Water and Moisture** — Do not use the AC battery charger/adapter near water — for example, near a sink, or in a wet room or basement. Do not use the equipment in heavy rain and do not immerse the equipment in water or other liquids.
- **Object or Liquid Entry** — Never push foreign objects of any kind into the equipment openings. The objects could touch dangerous voltage points or short out parts and cause a fire or electric shock. Never spill liquid of any kind on the equipment.
- **Attachments** — Do not use attachments that are not recommended. The use of such attachments may cause hazards and serious damage to the equipment.
- **Power Sources** — You should operate the equipment only from the type of power source indicated on the name plate of the AC battery charger/adapter. If you are not sure of the type of AC power that will be used, consult a dealer or local power company.
- **Overloading** — Do not overload power outlets and extension cords; this can result in a risk of fire or electric shock.
- **Cables** — Do not use cables other than those supplied with the DCS 465 Camera Back, except that an additional cable is required if you

will use the DCS 465 Camera Back as the only external device attached to a Macintosh IIfx or PowerBook computer (refer to chapter 4). Use only the SCSI cables supplied with the DCS 465 Camera Back to attach the camera back or other peripherals to the computer. If you use other cables, you may violate FCC emission requirements and could corrupt data on the hard disk.

- **Power-Cord Protection** — Route power-supply, and other cords, so that you are not likely to walk on them or pinch them with items placed on or against them; pay particular attention to cords at plugs, receptacles, and the point where they leave the equipment.
- **Grounding** — The AC battery charger/adapter is equipped with a three-wire grounding-type plug with a third (grounding) pin. The three-wire plug will fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace the obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
- **Lightning** — For added protection for the equipment during a lightning storm, or any time when you will leave the equipment unattended and unused for long periods of time, unplug the AC battery charger/adapter from the power outlet and disconnect the camera back from the computer. This will protect the equipment from damage caused by lightning or power-line surges.
- **Temperature, Humidity, Condensation** — We do not recommend operating the equipment below 32° F or above 130° F (0° to 55° C). We recommend operating the equipment within the range of 8% to 85% relative humidity, non-condensing. If condensation occurs, added time may be required to read from or write to a PCMCIA card. Condensation may be present if the camera back and/or PCMCIA card(s) are moved from a relatively cold environment (like an air conditioned hotel room), into a warm, humid environment. We recommend that you allow sufficient time for the camera back and/or

PCMCIA cards to normalize within the specified environmental ranges before operation. (Third-party, optional PCMCIA cards may have more restrictive operating temperature and humidity ranges. Refer to the specifications for the cards you use.)

- **PCMCIA cards —** PCMCIA cards (not supplied with the camera back) are fragile devices that can be damaged if not treated with care. Refer to the documentation accompanying any card(s) you obtain to ensure that you are handling the card as specified in that documentation, and that you are using the card within its operating ranges for temperature, humidity, condensation, and so on.
- **Servicing** — Do not attempt to service the equipment yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Never open the DCS 465 Camera Back. (Refer to chapter 9 for directions on cleaning a dirty imager.)
- **Damage Requiring Service** — Unplug the equipment from the wall outlet and computer, and refer all servicing to the manufacturer under the following conditions:
  - When any cord or plug is damaged (send cord only).
  - If liquid has been spilled or if objects have fallen in the equipment.
  - If the equipment has been exposed to rain or water.
  - If the equipment does not operate normally according to the operating instructions.
  - If the equipment has been dropped or the housing has been damaged.
  - When the equipment exhibits a distinct change in performance.
- **Disassembly** — The camera back is shipped as a single unit. Do not open or attempt to open the camera back; doing so will void the warranty.

You can connect the camera back to a computer with or without a PCMCIA card in the camera back. Once the camera back is connected to a computer, you can insert/remove a PCMCIA card while the camera back and computer are turned on or turned off; however, do not remove a PCMCIA card from the camera back while the red "Card Busy" light on the camera back is blinking. The blinking indicates that data are being read from or written to the PCMCIA card. If you do, you may lose the current image, and may lose all of your images as well.

CAUTION: To prevent fire or shock hazard, use only the recommended accessories or attachments.

Battery — Important Warnings

- Do not attempt to remove the battery; it is not a customer serviceable part.
- If you will be operating the camera back while it is connected to the AC battery charger/adapter, the camera back will be ready for operation almost immediately. However, if you are beginning with a dead battery, and notice unusual behavior such as random characters flashing on the camera back LCD, charge the battery following special charging instructions in chapters 4 (Macintosh) or 5 (PC). If you will be operating the camera back without the AC battery charger/adapter, you should charge the battery as described in chapters 4 (Macintosh) or 5 (PC). This will require one hour at most.

AC Battery Charger/Adapter — Important Warnings

- You should operate the equipment only from the type of power source indicated on the name plate of the AC battery charger/adapter. *A line voltage outside of this range can destroy the AC battery charger/adapter and/or the camera back.*
- Use only the supplied AC battery charger/adapter; do not plug other chargers or adapters into the DCS 465 Camera Back.
- The AC battery charger/adapter is for indoor use only.
- Do not use the supplied AC battery charger/adapter for any purpose other than for the DCS 465 Camera Back.
- Do not plug the AC battery charger/adapter into any equipment other than the DCS 465 Camera Back.
- The rechargeable battery in the camera back becomes warm during charging; this is normal operation.

Electromagnetic Emissions

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment conforms with the requirements of European Standard EN55022 with respect to radio interference for a Class B device.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le réglement sur le broullage radioélectrique édicté par le Ministère des Communications du Canada.

This digital apparatus does not exceed the class B limits for radio noise emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

Technical Assistance

Refer to the following sources for assistance if you have questions as you work with the KODAK Professional DCS 465 Digital Camera Back.

Assistance Needed	Source of Assistance
You encounter difficulties with hardware, images, or product performance.	Refer to the troubleshooting sections of this manual: camera back (in chapter 9), Photoshop Macintosh driver (in chapter 10), and TWAIN (PC) driver (in chapter 11). If needed, call your dealer.
The liquid crystal display (LCD) on the camera back shows information you do not understand.	Refer to chapter 9.
You need assistance with your camera.	Refer to the instruction manual supplied with your camera (not supplied by Kodak).
A message appears on the computer screen that you do not understand when using one of the supplied software drivers.	Refer to the messages section of this manual: Photoshop Macintosh driver (in chapter 10), and TWAIN (PC) driver (in chapter 11).
You encounter difficulty with the DCS 465 Camera Back.	Perform the self-test and update the camera firmware. Refer to the "Control Panel" section in chapter 10), and TWAIN (PC) driver (in chapter 11).
You need other assistance.	Contents and index in this manual.
You are a customer in the U. S, and you are unable to find answers to your questions using this manual.	Call Kodak at 1-800-23-KODAK (1-800-235-6325).
You are a customer outside the U. S. and you are unable to find answers to your questions using this manual.	In Canada call 1-800-GO-KODAK (1-800-465-6325); elsewhere contact your local Kodak service representative.

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Before You Begin

NOTE: Before you continue, complete and submit the enclosed Warranty Registration card. You should also read the Warranty and the Software License Agreement at the front of this manual.

Check the following lists to ensure that you have the required and optional computer hardware and software, and accessories, to use the KODAK Professional DCS 465 Digital Camera Back (DCS 465 Camera Back).

The DCS 465 Camera Back can be used with a Macintosh computer and/or with an IBM PC or compatible computer. Separate instructions are included on the following pages. (You may be able to use the camera back on other computer platforms, or with additional operating systems, using drivers prepared by companies other than Kodak, or by developing your own driver. Contact Kodak for information.)

Macintosh Computer — Hardware and Software

The following sections list the required and optional computer hardware and software needed to run the Kodak Driver for use with Adobe Photoshop Software on an Apple Macintosh computer.

IMPORTANT: Refer to the READ ME file on the supplied software driver diskette for additional details or revisions to these requirements.

Required Computer Hardware

Apple Macintosh computer product lines that support 32-Bit QuickDraw, with at least 8 megabytes (MB) of random access memory (RAM). For faster acquisition of an image from the DCS 465 Camera Back to the computer, we strongly recommend a minimum of 32 MB of RAM.

NOTE: Adobe Photoshop 3.0, when run on a Power Macintosh, needs a minimum of 16 MB of RAM (including at least 11 MB of RAM in addition to the memory used by the operating system), and recommends 24 MB of RAM. We recommend at least 48 MB of RAM for the fastest acquire times on a Power Macintosh.

Hard disk, 160 megabyte (MB) minimum. We recommend 250 MB or greater. For some operations Adobe Photoshop requires three to five times the size of the file in combined hard disk space and RAM. DCS 465 Camera Back color images are approximately 18 MB and monochrome images are approximately 6 MB. Therefore you may need large amounts of both RAM and free hard disk to acquire and process an image.

IMPORTANT: Use only the supplied cables; do not use substitute cables, except that an additional cable is required if you will use the DCS 465 Camera Back as the only external device attached to a Macintosh IIfx or PowerBook computer. (If you are using a Macintosh IIfx or PowerBook computer, refer to chapter 4.)

Required Monitor and Display Card

A color monitor is required for color work. Your monitor should be at least 12 inches or larger; the monitor on a PowerBook is also acceptable. (You can not see all of the information box for an image on a 12-inch Apple monitor.) You need the appropriate display card for the monitor in use; we recommend an 8-bit or 24-bit video display card. An 8-bit card can display 256 colors, while a 24-bit card can display more than 16.7 million colors. (Neither the amount of data stored for each image, nor the quality of any printed output, is affected by the monitor or card in use.) If you do not have a 24-bit display card, the software automatically dithers the display data to achieve the best looking image.

Required Systems Software

Apple System software version 7.0, 7.1, 7.1.2, or 7.5 and 32-Bit QuickDraw software. (If you are using System 7.0 or System 7.0.1 you should use the System Tuner version 1.1.1 or later, or consider upgrading to System 7.1 or 7.5.)

Required Applications Software

Adobe Photoshop, 2.0, 2.5, or 3.01.

SCSI Terminators

Appropriate SCSI terminator(s), as required for your computer system.

IBM PC or Compatible Computer — Hardware and Software

These sections list required and optional hardware and software needed to run the Kodak Driver for TWAIN-compliant PC applications.

IMPORTANT: Refer to the README file that is installed with the software driver for additional details or revisions to these requirement.

Required Computer Hardware

An 80386 or higher computer with a minimum of 8 megabytes (MB) of random access memory (RAM) that can operate Microsoft Windows 3.1. We strongly recommend a Pentium computer with at least 32 MB of RAM and a one gigabyte hard disk or larger for faster acquisition of an image from the DCS 465 Camera to the computer.

Hard disk, 160 megabyte (MB) minimum; we recommend 250 MB or greater. At least 10 MB of free disk space; for fastest performance we recommend at least 20 MB of free disk space.

NOTE: Your TWAIN application may have additional requirements; for example, Adobe Photoshop 3.0 has requirements beyond those listed above.

Required Monitor and Display Card

A color monitor is required for color work. VGA or compatible display. You need the appropriate display card for the monitor in use; we recommend a 16-bit or 24-bit display card. A 16-bit card can display up to 32,768 colors, while a 24-bit card can display more than 16.7 million colors. (Neither the amount of data stored for each image, nor the quality of any printed output, is affected by the monitor or card in use.) If you do not have a 24-bit display card, the software automatically dithers —blends the display data — to achieve the best looking image.

Required SCSI Interface

ASPI (Advanced SCSI Programming Interface) Windows host adapter such as those from Adaptec, Inc. running EZ-SCSI 3.0 or later.

or

SCSI Host Adapter for PCs with AT-style bus (Future Domain No. TMC-1660), or SCSI Host Adapter for PCs with Micro Channel-style bus (Future Domain No. MCS-700).

or

PCMCIA-to-SCSI II adapter (such as the New Media Bus Toaster) used with a laptop computer.

If other external SCSI devices are connected to your computer, you may need to obtain a SCSI terminator depending on the termination of devices in the SCSI chain.

Required Systems Software

Microsoft DOS 6.2 or higher with either Microsoft Windows, version 3.1 or Windows 3.11 for Workgroups.

Required Applications Software

A TWAIN-compliant software application. The KODAK TWAIN driver can be used with: Adobe Photoshop 2.5 and 3.0 for Windows, PhotoStyler 2.0, PhotoStyler 1.1A with the PhotoStyler Accessory Pack 1.1A for Windows installed, Micrografx Picture Publisher 4.0 and 5.0, and Media Cybernetics HALO Desktop Imager 2.01.H, and may work with other software applications that support TWAIN specifications.

NOTE: PhotoStyler has recently been discontinued by Adobe. Consult your preferred image editing software producer for potential upgrade information. For example, Adobe currently offers an upgrade path from PhotoStyler to Photoshop.

Optional Hardware/Software for Playing Recorded Sound

A hardware sound board is required if you want to play the ".WAV" files you can record with the microphone in the camera.

Optional Printers

NOTE: In the United States, contact Kodak at 1-800-23-KODAK (1-800-235-6325) for detailed information on printer options and accessories and to obtain ordering catalog numbers; in Canada call 1-800-GO-KODAK (1-800-465-6325), and elsewhere outside the United States contact your local Kodak representative.

KODAK XLS 8400 PS Printer. Prints 300 pixels per inch, 24-bit color images up to 8.5 x 12-inches (21.6 x 30.5-cm) to KODAK EKTATHERM XLS print paper or transparencies using ADOBE POSTSCRIPT Level 2.

KODAK XLS 8600 (raster) and XLS 8600 PS (raster and Adobe Postscript Level 2) Printers. Prints 300 pixels per inch, 24-bit color or eight-bit grayscale images up to 8.5 x 12-inches (21.6 x 30.5-cm) to KODAK EKTATHERM XLS print paper or transparencies using KODAK EKTATHERM XTRALIFE ribbons. (The ribbon — available in color or black — incorporates a laminate patch that protects a finished print from fingerprints. The patch gives prints additional light-fade stability and prevents dye from transferring to PVC sleeves and folders.) Print time for the XLS 8600 is 1.7 minutes or less at maximum image area including EKTATHERM XTRALIFE (3.6 minutes or less for a transparency).

KODAK XLT 7720 Digital Continuous Tone Printer. Prints 203 pixels per inch with output sizes 8.5 x 11-inch (21.6 x 27.9-cm) or 11 x 11-inch (27.9 x 27.9-cm). Prints eight-bit black and white or 24-bit color reflective prints and transparencies.

Optional DCS 465 Camera Back Equipment

Kodak accessories, for example, PCMCIA cards. Refer to the appendix "Optional Equipment & Spare Parts List" for specific details.

Electronic flash and accessories available from the manufacturer of your camera.

Optional PCMCIA Hard Disk Card

The DCS 465 Camera Back is designed to accept PCMCIA hard disk cards that support the PCMCIA "ATA" interface. Refer to the READ ME file on the supplied software driver diskette for information on specific cards known to work with the camera back.

2

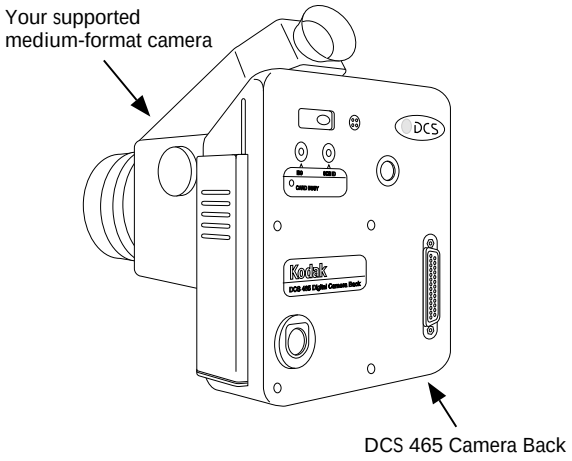
Introduction

This chapter includes:

- A brief introduction to the design of the KODAK Professional DCS 465 Digital Camera Back.
- An overview of the product features.

NOTE: This manual describes the operation of the DCS 465 Camera Back, and how it may affect the operation of your camera. The manual assumes that you are familiar with your camera.

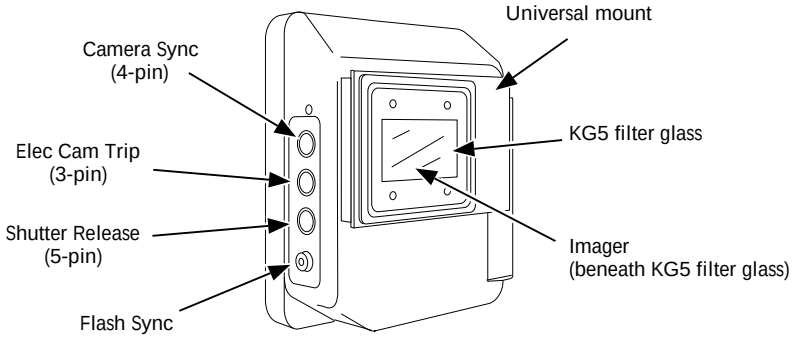
The KODAK Professional DCS 465 Digital Camera Back (DCS 465 Camera Back) is a portable unit that allows you to capture and store high-resolution digital images when using your own supported medium-format camera. You can attach the DCS 465 Camera Back to one of several computers and move your images from the camera back to the computer using one of the special software driver provided by Kodak. You can then use the image in other applications or edit it with your image editing software. You can also record sound with the built-in microphone in the camera back and play the sound files through your computer system.



Features

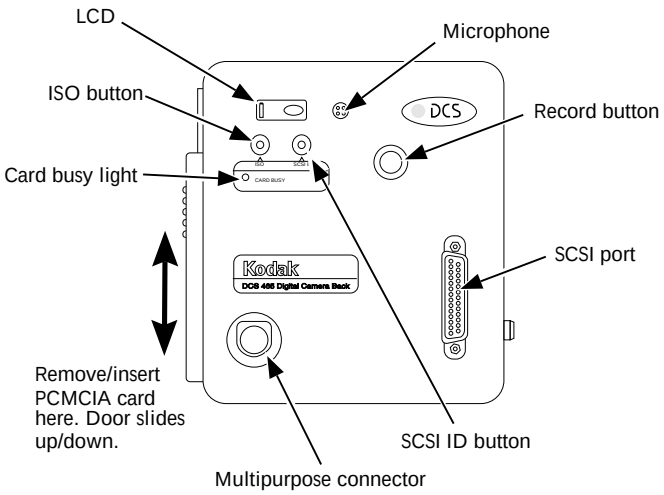
The DCS 465 Camera Back, a sealed one-piece unit, incorporates the following features:

FRONT VIEW



- A KODAK charge coupled device (CCD) imager available in a color model and a monochrome model. When you take a picture, the imager records images with 6 megapixels of data.
- Exposure indexes equivalent to film speeds of 80 for a color camera back, and 160 for a monochrome camera back.
- Sixteen megabyte (MB) of dynamic random access memory (DRAM).
- A universal mount rigidly mates the camera back to your supported camera and supports horizontal or vertical orientation.
- Interface for mechanically and electronically tripped cameras.
- Capability to work with your professional flash systems.
- Imager cover to protect the imager and KG5 filter glass when the camera back is not connected to your camera.

BACK VIEW



- A PCMCIA-ATA Type III slot designed to accept PCMCIA cards that support the “ATA” protocol.
- A liquid crystal display (LCD) that shows status and control information.
- A SCSI port to connect the DCS 465 Camera Back to your computer for transferring images from the camera back to your computer. You can take pictures while your camera and camera back are connected to a computer. The images are then immediately available on the computer. The camera back is a non-terminated device.
- A single, rechargeable nickel hydride battery that powers the camera back. In typical shooting situations a fully-charged battery provides power for up to 150 frames.

- Two controls — one sets the camera back SCSI ID; the other sets the ISO.
- A built-in microphone records sound as ".WAV" files at "radio quality"— 8-bits, 11 kilohertz, monaural.
- Software drivers to move images from the camera back to your computer. You can also use the drivers to perform self-tests on the DCS 465 Camera Back from your computer, and to load new firmware into the DCS 465 Camera Back. This last function allows you to keep the firmware in the camera back up-to-date without sending the camera back to a service center.

3

Quick Start

This chapter provides a brief summary of the steps you follow to use the DCS 465 Camera Back. Most steps refer you to more detailed explanations elsewhere in this manual; you can also refer to the quick reference card.

- If you are experienced with previous Kodak digital cameras and with personal computers, you may be able to follow these steps without referring to other material.
- If you are inexperienced with previous Kodak digital cameras, and/or with personal computers, read through the steps below (without following them), as an overview. Then proceed through the manual for a thorough explanation of each step.

1. **Obtain one or more supported PCMCIA cards.**

   PCMCIA cards are not supplied with the camera back, but are available from Kodak (and elsewhere). The camera back accepts cards that support the PCMCIA "ATA interface. Refer to the READ ME file supplied on the software driver diskettes for supported cards, and to the appendix "Optional Equipment & Spare Parts List."

2. **PC customers only: obtain and install — if not already present — a supported SCSI host adapter card.**

   Supported adapters are in chapter 1; installation information is in chapter 5.

3. **(Optional) PC customers only: Obtain and install a sound board — required to play sounds recorded with the camera system.**

4. **Install the supplied software driver.**

   A. Macintosh

   a. Load the diskette "KODAK Driver for ADOBE PHOTOSHOP Software for use with KODAK Professional DCS 465 Digital Camera Backs." Review its READ ME file. For Photoshop 2.5 or later, copy all diskette files (except READ ME and TEACHTEXT) into the folder containing your Photoshop plug-ins (it is probably named PLUG-INS). For earlier Photoshop versions, copy the files into the folder with the Photoshop PS PREFS file. Refer to chapter 4.

b. Load the diskette “KODAK DCS 465 Calibration (CAL) File: Macintosh.” The diskette contains a calibration file whose filename is your camera back serial number followed by a “.cal” suffix. For example, if the serial number of your camera back is 465-1006, the calibration filename would be 465-1006.cal. For Photoshop 2.5 or later, copy the calibration file into the folder containing your Photoshop plug-ins (it is probably named PLUG-INS). For earlier Photoshop versions, copy the files into the folder with the Photoshop PS PREFS file. Refer to chapter 4.

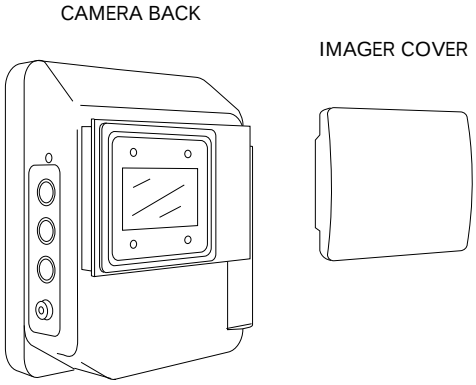
B. PC

a. Load the diskette “KODAK Drivers for TWAIN-Compliant Software for use with DCS 465.” Review its README.TXT file. Run the SETUP program to install the TWAIN driver supplied by Kodak.

b. Load the diskette “KODAK Professional DCS 465 Digital Camera System Calibration File TWAIN (PC) Format.” Review its README.TXT file. Run the SETUP program to install the calibration for your specific camera.

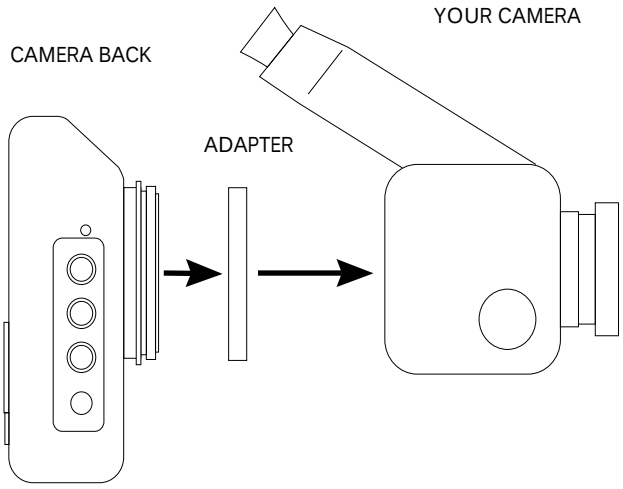
5. **Remove the imager cover from the camera back by inserting your thumb beneath a corner of the cover and separating it from the camera back.**

   Be extremely careful while the imager is exposed, and be certain to retain the cover and use it whenever that camera back is separated from your camera.



. . . . . .

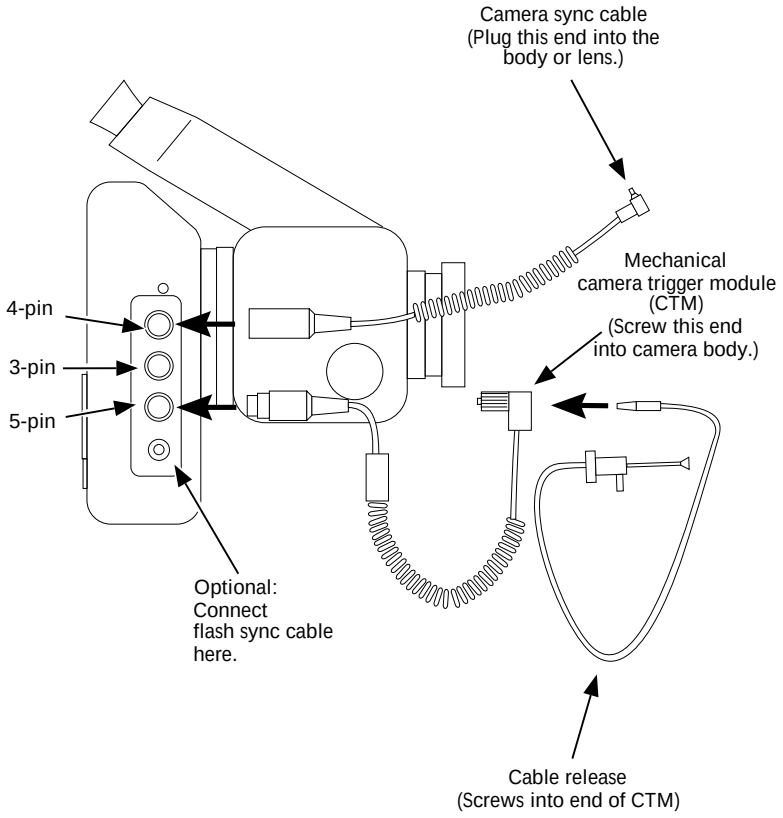
6. Mount the camera back to your camera as shown below for a typical configuration.



. . . . . .

7. Make the appropriate cable connections; follow step A for mechanically tripped cameras, and step B for electrically tripped cameras.

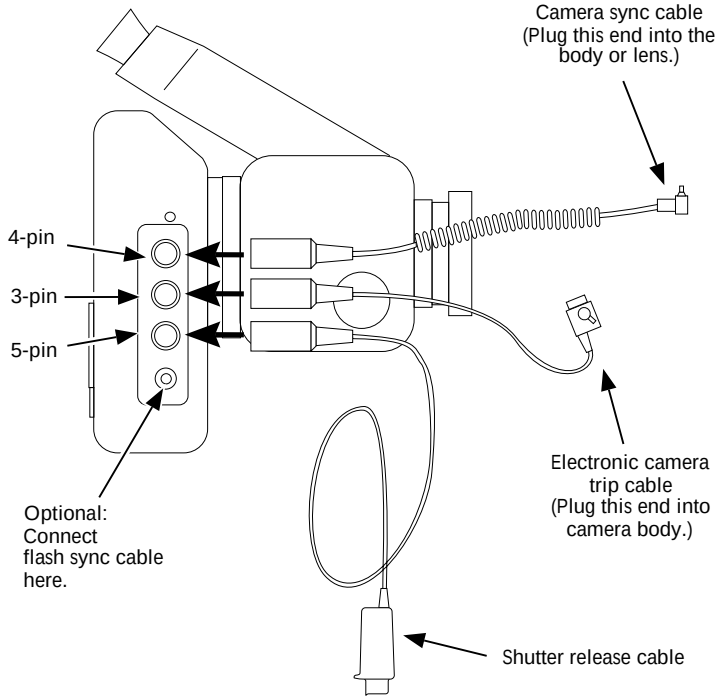
A. Mechanically tripped camera.



NOTE: Your cable release (not supplied) must have a "throw" of at least 5/8-inch in order to extend far enough into the CTM to trip the camera. The throw is the distance the pin extends from the end of a cable release when you fully depress the cable release button.

. . . . . .

B. Electrically tripped camera.



8. **Attach the supplied AC battery charger/adapter.**

   Connect the adapter to a source supplying power within the range on its label, and to the connector on the lower left corner of the camera back. The first time it is used, allow the battery to charge for one hour. If you are beginning with a dead battery (you notice unusual random characters on the camera back LCD) follow special charging instructions in chapters 4 (Macintosh) or 5 (PC).

9. **Set the Camera Back SCSI ID.**

   Push the camera back SCSI ID button once to enter SCSI mode, and then repeatedly to rotate through SCSI IDs. Stop at the desired ID. Do not select an ID that conflicts with any in use on your computer system. If you are not using the AC battery charger/adapter you will need to press the record button to wake the camera back before you can use the SCSI ID button. Refer to chapters 4 (Macintosh) or 5 (PC).

10. **Connect the camera back to your Computer.**

    For this step we encourage all customers to refer to the detailed instructions in chapters 4 (Macintosh) or 5 (PC) to ensure that this connection is made properly before continuing. There you will turn off your computer, and connect the camera back, a non-terminated SCSI device, to the computer.

11. **Place a supported PCMCIA card into the camera back.**

    Open the door on the side of the camera back by sliding it up, push the PCMCIA card firmly into place, and close the door. (Do not be startled by the red Card Busy light that blinks briefly, or by the slight noise.) Refer to chapters 4 (Macintosh) or 5 (PC).

12. Update the camera back firmware.

This onetime action ensures that the most current control commands (firmware) are loaded in the camera back.

A. Macintosh

Run Photoshop, choose FILE, ACQUIRE, KODAK DCS 465. The driver image window appears. Click the CONTROL PANEL button. Click UPDATE CAMERA FIRMWARE. Refer to chapter 4.

B. PC

Run your PC TWAIN-compliant PC application. Access the TWAIN driver through the select-then-acquire process used by your application to access the driver window. Examples for multiple applications appear in chapter 5. Click the CONTROL PANEL button. Click UPDATE CAMERA FIRMWARE. Refer to chapter 5.

13. Format a PCMCIA card.

Your PCMCIA card must be (DOS) formatted with the camera back. Formatting destroys any files that may be on the card. Reach the Control Panel as described in the previous step. Click FORMAT DISK, a onetime process for each card you use. Refer to chapters 4 (Macintosh) or 5 (PC).

14. Take pictures with your camera.

The camera back is now ready for you to take pictures. Use it while connected to a computer and/or the AC battery charger/adapter. Or you can use the camera and camera back without the computer or adapter. Refer to chapter 6.

15. (Optional) Record sound.

Hold the back of the camera back about six inches from your mouth (the microphone is behind four small holes centered at the top of the camera back). Press and hold the record button (to the right and below the microphone), and speak into the microphone. Refer to chapter 6. Recorded sound files can be played by the computer; they cannot be played by the camera back. Refer to chapter 6.

16. Move images from the camera system to the computer.

With equipment off, reconnect the camera system to the computer (if needed), run your application, access the driver image window as described above in step 12.

Thumbnails of pictures you have taken appear in the window. Scroll through images, select one, adjust color using the balance controls, and acquire the image into your application by clicking the ACQUIRE button. And/or move an image to an archive folder on your computer by selecting the image(s) and using COPY TO FOLDER or MOVE TO FOLDER. Refer to chapters 7 (Macintosh) or 8 (PC).

17. Quit

If needed, quit your software application. Shut down your computer system. Disconnect the AC battery charger/adapter from the camera back; the camera back will turn off automatically. You can leave the camera back permanently connected to your computer or you can remove it. If you do remove the camera back from your camera, treat the imager with extreme care, and always snap the imager cover into place on the camera back.

4

Preparing the DCS 465 Camera Back for Use with Your Macintosh Computer

This chapter describes the series of steps you follow to prepare the KODAK Professional DCS 465 Digital Camera Back (DCS 465 Camera Back) for use in a Macintosh computer environment. This includes how to:

- Connect the DCS 465 Camera Back to your camera.
- Charge the battery and use the AC battery charger/adapter.
- Set the SCSI ID on the DCS 465 Camera Back.
- Make the SCSI connection between the DCS 465 Camera Back and your Macintosh computer.

- Install the driver for Adobe Photoshop Software and the camera back calibration file (CAL) on your Macintosh computer.
- Insert (and remove) your PCMCIA card into the DCS 465 Camera Back.
- Access the driver for Adobe Photoshop Software.
- Update camera back firmware.
- Format a PCMCIA card for use with the camera back.

IMPORTANT: We assume that you are familiar with the operation of your Macintosh computer. If you are not, refer to the manuals that accompany that computer before continuing.

Before you continue, if you have not completed and returned the enclosed Warranty Registration card, please do so now.

> **CAUTION:** In this chapter you will connect the camera back to your computer. Once connected, do not disconnect the camera back from the computer while using the supplied software, or even while the computer is on. Doing so may result in the loss of data from the PCMCIA card in the camera back or from the hard disk in your computer. Instead, turn off all equipment in the order described at the end of this chapter before disconnecting the camera back.

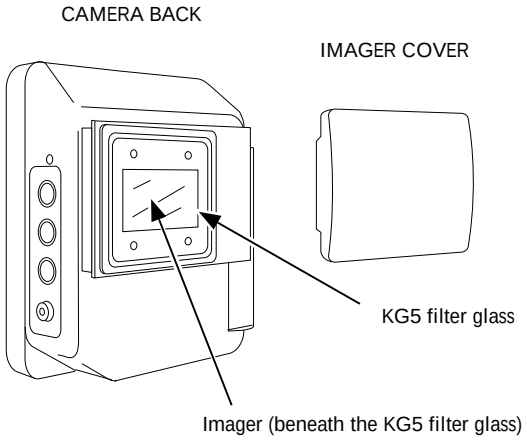
Connecting the DCS 465 Camera Back to Your Camera

Follow the steps in this section to connect the DCS 465 Camera Back to your camera.

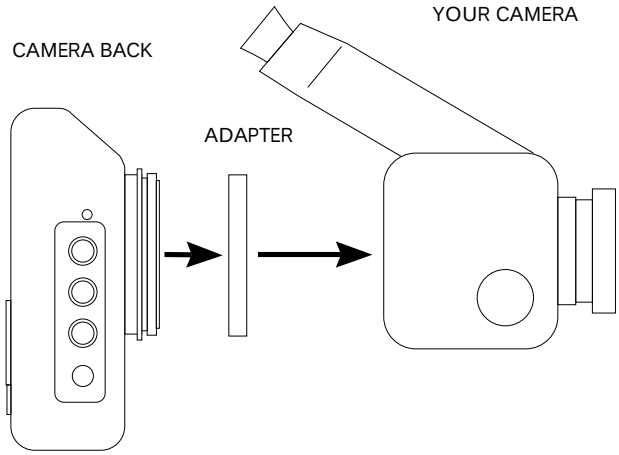
> **CAUTION:** As you complete these steps handle the camera back — and especially the imager – with extreme caution. A damaged imager can result in a very expensive repair not covered by the warranty.

1. Remove the imager cover from the camera back by inserting a thumb beneath a corner of the cover and separating it from the camera back.

   IMPORTANT: Retain the imager cover and immediately replace it at any time that you remove the camera back from your camera.



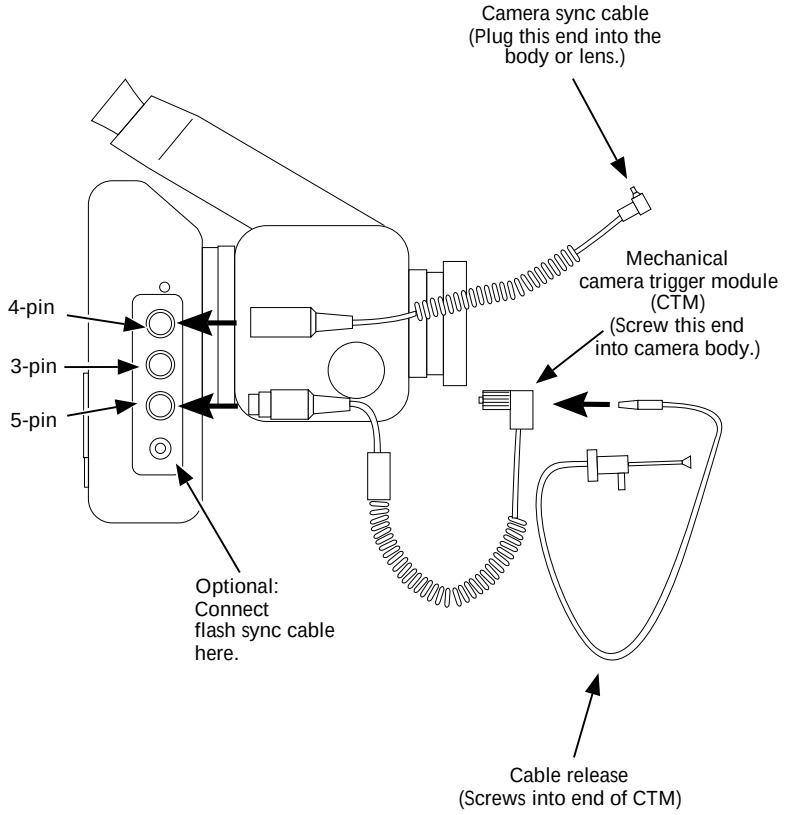
2. Mount the camera back to your camera as shown below for a typical configuration; first mount the adapter to your camera, and then mount the camera back to the adapter.



3. Follow part A of this step if you are working with a mechanically tripped camera, and part B if you are working with an electrically tripped camera. The individual connections can be made in any order.

A. Mechanically tripped camera.

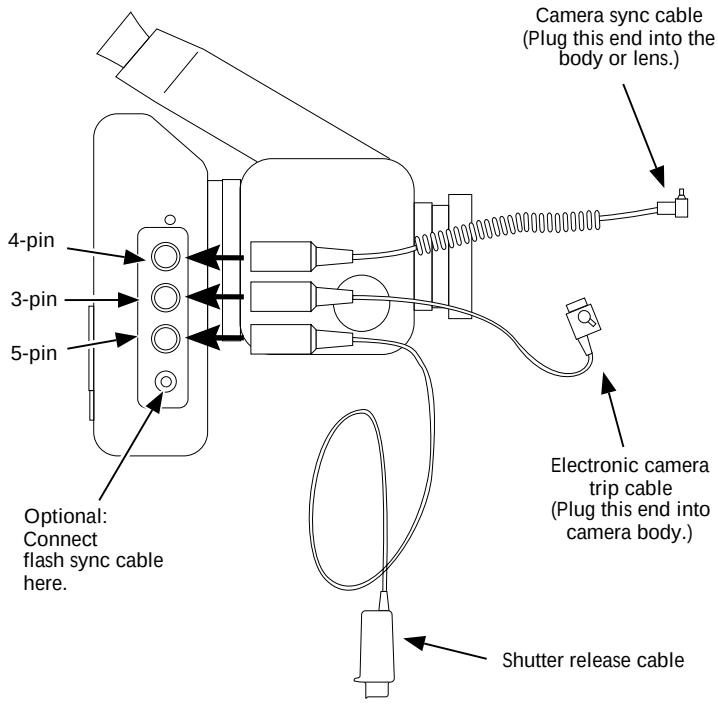
CAUTION: To simplify making these connections, each cable has unique connectors at both ends. Cables can only be plugged into one connector. Therefore, do not force the end of any cable into any connector; instead, all cables should fit comfortably into their connectors.



NOTE: Your cable release (not supplied) must have a “throw” of at least 5/8-inch in order to extend far enough into the CTM to trip the camera. The throw is the distance the pin extends from the end of a cable release when you fully depress the cable release button.

B. Electrically tripped camera.

CAUTION: To simplify making these connections, each cable has unique connectors at both ends. Cables can only be plugged into one connector. Therefore, do not force the end of any cable into any connector; instead, all cables should fit comfortably into their connectors.



Using the AC Battery Charger/ Adapter

Keep the following battery considerations in mind as you use the camera back.

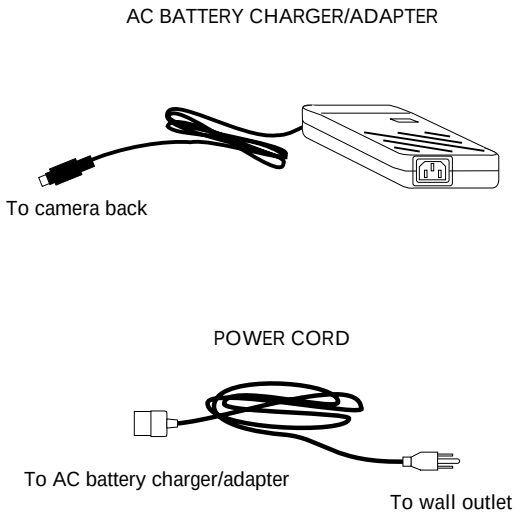
- **IMPORTANT**: Do not attempt to remove the battery; it is not a customer serviceable part.
- The DCS 465 Camera Back incorporates a single, rechargeable nickel hydride battery that powers the camera back.
- In typical shooting situations, a fully-charged battery provides power for up to 150 frames.
- You can operate the camera back while connected to the supplied AC battery charger/adapter, or you can recharge the battery with the adapter and then use the camera back in the field without the adapter.
- The adapter will run the camera back continuously while it is charging the battery.
- If you are using the camera back in an environment in which a power outlet is available, we recommend that you operate the camera back while connected to the AC battery charger/adapter as described below.
- Refer to chapter 9 for information on the effect of temperature extremes on battery operation.

Charging the Battery

You should charge the battery for at least one hour before using the camera back for the first time, and thereafter on a regular basis as needed. Charging the battery for at least one hour will ensure that you begin shooting with a fully charged battery, and that you obtain the most images per charge.

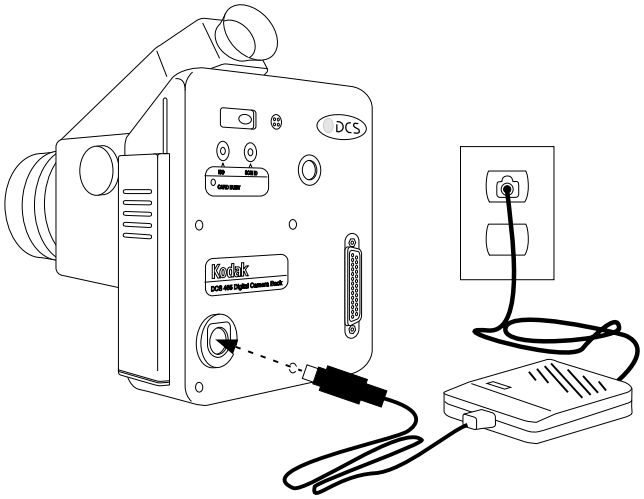
Follow these steps to charge the battery.

1. Locate the AC battery charger/adapter and power cord supplied with the camera back.



2. Plug the appropriate end of the power cord into the AC battery charger/adapter.
3. Plug the other end of the power cord into a wall outlet.

4. Plug the AC battery charger/adapter into the DCS 465 Camera Back as shown below.



5. The first time the camera back is used, allow the battery to charge for at least one hour.

   SPECIAL CHARGING INSTRUCTIONS: Whenever the battery is dead (unusual random characters appear on the camera back LCD):

   A. Charge the battery for 15 minutes.

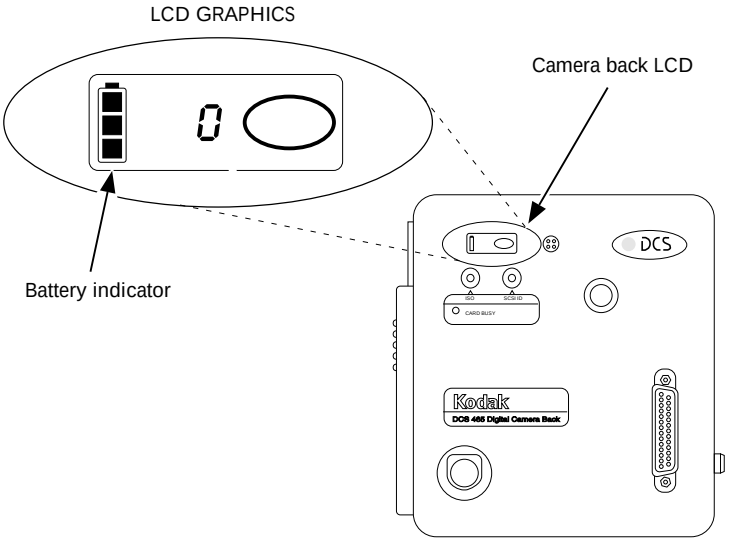
   B. Disconnect, then reconnect, the AC adapter.

   C. Wait five minutes.

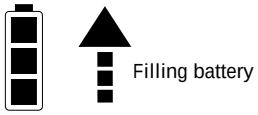
   D. If unusual characters still appear, repeat steps B and C as needed.

   E. Allow the battery to charge for one hour.

IMPORTANT: An LCD at the top left corner of the camera back displays a battery icon.

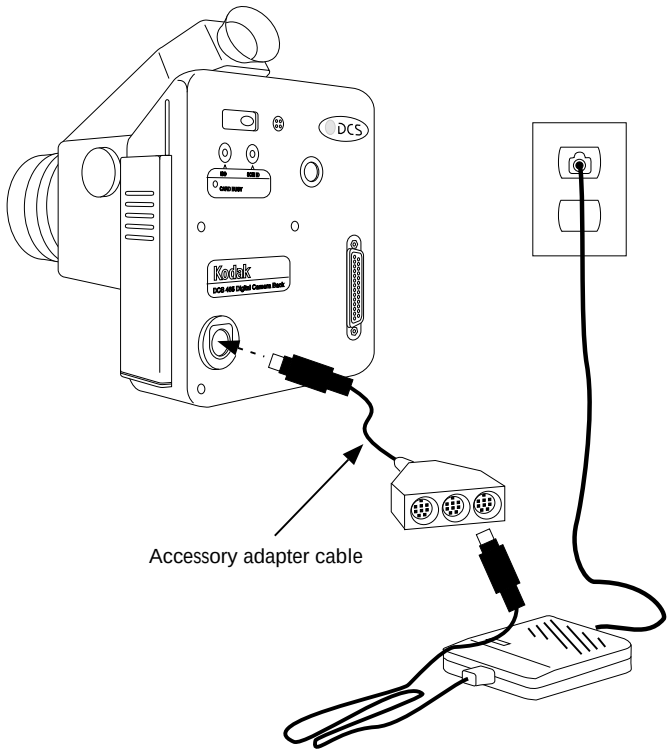


While the battery is charging, the three segments of this icon light repeatedly in turn from bottom to top; when the battery is fully charged all three remain lit.



When the camera back is used without the adapter, the number of lit segments indicates the charge state of the battery. When the bottom segment is blinking, the battery needs recharging.

6. (Optional) Use the supplied accessory adapter cable as shown in the following illustration. Doing so allows simultaneous use of the AC battery charger/adapter and other accessories as available (refer to Appendix D for ordering information).



Setting the SCSI ID on the DCS 465 Camera Back

In this section you will set the SCSI identification (ID) number for the DCS 465 Camera Back. Each SCSI device connected to the same computer must have a different ID number. Your Macintosh computer is number 7, and the internal hard disk on your computer is probably number 0. If your computer has a CD-ROM drive, be certain to avoid its number also; it may be number 3 if it is an internal drive supplied by Apple Computer, Inc. Therefore avoid setting the camera system to numbers 0, 3, and 7 since the DCS 465 Camera Back must have a unique SCSI ID. Additionally, the camera back presents "PC" and "PP" as possible SCSI modes. These are not intended for use when connected to a Macintosh computer; do not make either of these SCSI choices.

IMPORTANT: This section assumes that the camera back and the computer are not currently connected. You should never change the SCSI ID on the DCS 465 Camera Back when it is connected to a computer.

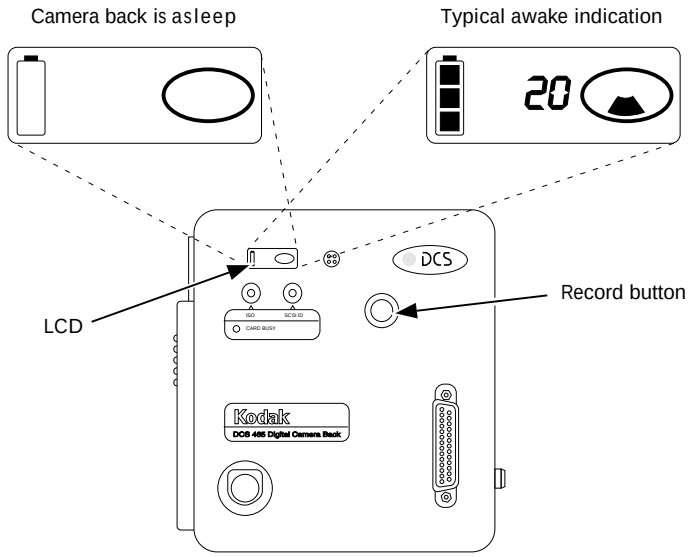
1. Shut down your Macintosh computer.
2. If SCSI devices other than the DCS 465 Camera Back are connected to your Macintosh computer, for example a CD-ROM drive or hard disk, determine their SCSI identification numbers so that you can select a different number for the DCS 465 Camera Back. If necessary, refer to the instructions for those devices to determine how to find their numbers.

   NOTE: Since you may connect the camera back to different computers, or since you may change the external devices connected to a Macintosh computer you regularly use with the camera back, you should ensure that the DCS 465 Camera Back has a unique SCSI ID each time you connect it to a Macintosh computer.

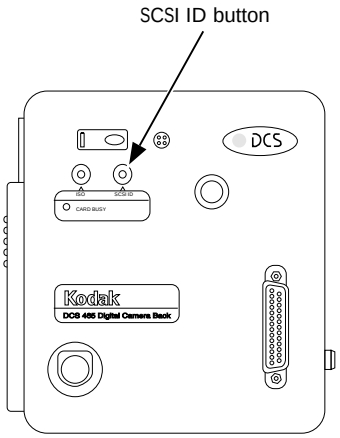
3. Wake (see illustration below) the DCS 465 Camera Back using one or the other of these two methods.

   A. Operate while connected to the AC battery charger/adapter; the camera back is continually awake in this state.

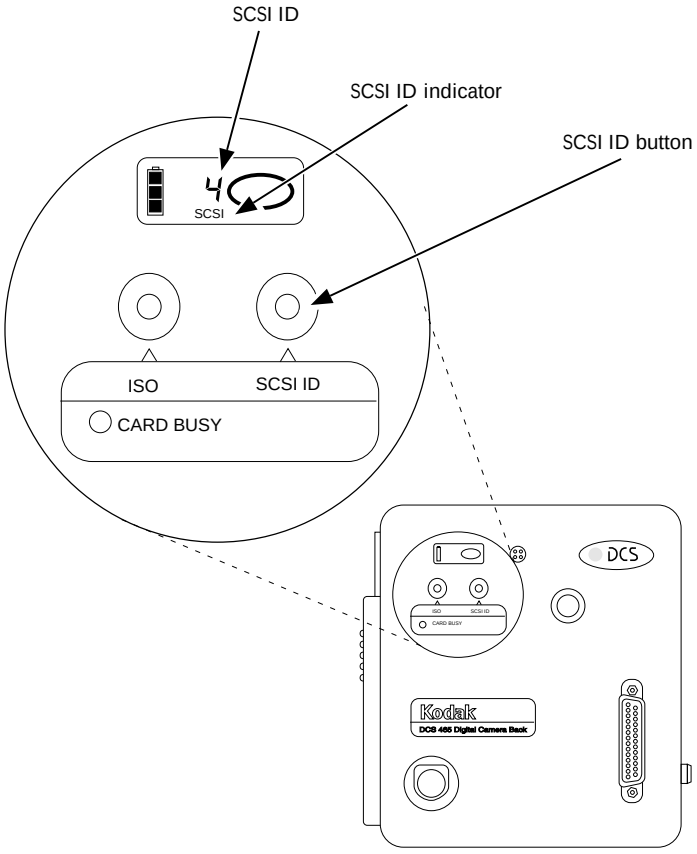
   B. When not connected to the adapter, wake the camera back by lightly pressing the record button; with an electrically tripped camera you can also quickly tap the shutter release cable button. (The camera back sleeps after several seconds of inactivity; as you complete these steps reawaken the camera back as needed.)



4. Locate the indented button on the back of the DCS 465 Camera Back labeled “SCSI ID.”



5. Press the SCSI ID button once with your fingertip or other blunt object; this action wakes SCSI mode. The characters “SCSI” (called the SCSI indicator), as well as a single value from 0 to 7, “PC,” and “PP” appear on the camera back LCD. That value is the current SCSI ID of the DCS 465 Camera Back.



6. While “SCSI” still appears on the LCD, you change the current SCSI ID by pressing the SCSI ID button repeatedly. The ID rotates through the values 0 to 7, “PC,” and “PP.” Stop when you have the SCSI ID you want.

   IMPORTANT: As mentioned at the start of this section, avoid the values 0 and 7, do not select “PC” or “PP,” and do not use a number currently assigned to any other connected SCSI device such as a CD-ROM drive which is usually number 3 if it is an internal drive supplied by Apple Computer, Inc.

   A DCS 465 Camera Back set to a SCSI ID currently in use by another connected SCSI device may not respond to the Macintosh computer; instead, the DCS 465 Camera Back will flash the SCSI indicator on the camera back LCD. If this occurs, reset the SCSI ID on the DCS 465 Camera Back as described in this section, and try again.

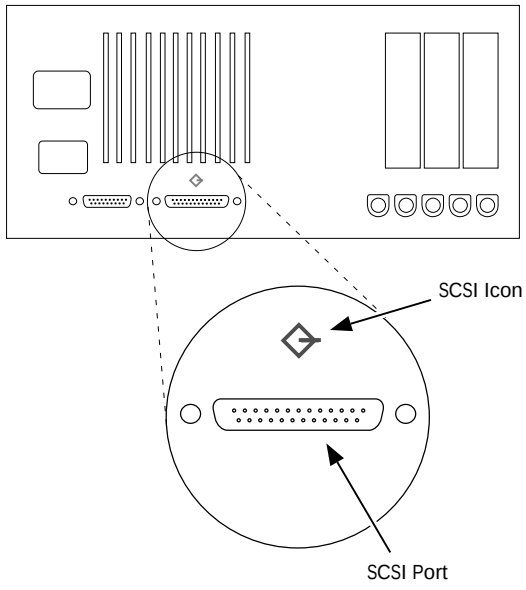
Making the SCSI Connection

NOTE: Leave the camera back connected to your camera while you make this connection. Refer to chapter 9 for an explanation of supported configurations.

The DCS 465 Camera Back is a non-terminated SCSI device that connects to your Macintosh computer with one of the included SCSI cables. In normal usage you may connect and disconnect the camera back from the Macintosh computer on a regular basis; for this reason you may want to position your computer so that its SCSI connector is readily accessible.

The back of the Macintosh computer has a number of connectors and accompanying icons, including a SCSI connector (also called a port) and icon. Find that SCSI port now, and determine whether or not a device is attached.

BACK OF MACINTOSH COMPUTER



Two sets of instructions follow, depending on whether or not other external SCSI devices are connected to your computer.

NOTE: You may need to obtain a SCSI terminator to complete these steps if other external SCSI devices are connected to your computer. A single 25-pin SCSI terminator is supplied with the DCS 465 Camera Back.

DCS 465 Camera Back as the Sole SCSI Device

Follow these steps if you will connect the DCS 465 Camera Back as the sole external SCSI device attached to your Macintosh computer; otherwise continue at the section of this chapter entitled "DCS 465 Camera Back Used with Other SCSI Devices."

Three sets of directions are provided in this section. Follow the first set (A) for any supported Macintosh computers except the PowerBook or Macintosh IIfx computers. Follow the second set (B) for the PowerBook, and the third set (C) for the Macintosh IIfx computer.

A. Follow these steps if no external SCSI devices are connected and you are using any supported Macintosh computer except the PowerBook or Macintosh IIfx computers.

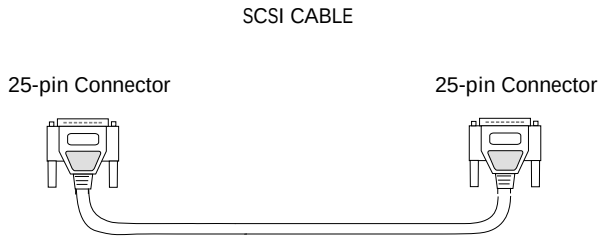
1. Turn off the computer.

   IMPORTANT: Later when you connect and disconnect the Macintosh computer and the DCS 465 Camera Back on a regular basis, make sure that the Macintosh is off. Some software and peripherals check the SCSI connection periodically. If the Macintosh computer is on, and you connect the camera back while the SCSI connection is being used, the Macintosh computer may hang and you will need to restart.

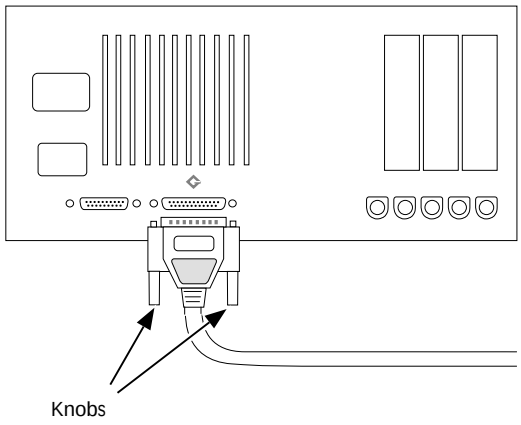
2. Place the DCS 465 Camera Back in a convenient position next to your Macintosh computer.

3. Connect the AC battery charger/adapter to the camera back as described earlier in this chapter. Although this step is optional, we recommend it whenever the camera back is connected to a computer.
4. Select the SCSI cable with the 25-pin connectors at both ends.

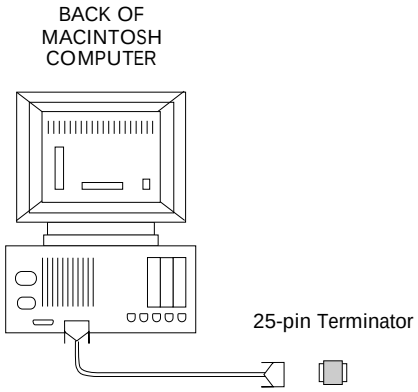
   IMPORTANT: Use only the cable supplied with the camera back; do not use a substitute cable.



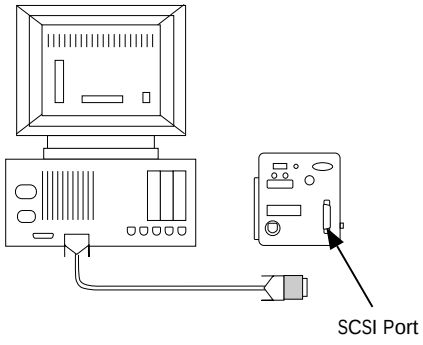
5. Attach one 25-pin connector to the SCSI port on the back of the Macintosh computer. Make sure the connector is well seated by pressing it into place firmly, and then tighten both knobs on the cable connector.



6. Attach the appropriate end of the supplied 25-pin SCSI terminator to the open 25-pin end of the SCSI cable you just attached to your Macintosh computer.



7. Attach the open end of the 25-pin terminator to the SCSI connector on the back of the DCS 465 Camera Back.



8. (Optional) Later, to disconnect the camera back from the Macintosh computer, shut down the computer. Then disconnect the terminator from the camera back. Disconnect the SCSI cable from the Macintosh computer. Do not leave a SCSI cable with an empty connector/ terminator dangling from your Macintosh computer.

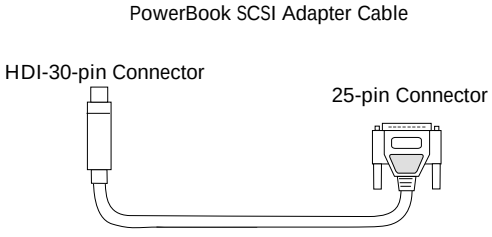
Skip the next sections and continue at "Installing the KODAK Driver for Adobe Photoshop Software (Macintosh) and the Calibration File" later in this chapter.

B. Follow these steps if no external devices are connected and you are using a Macintosh PowerBook computer.

The camera back has been successfully tested with a variety of PowerBook models (except do not use the camera back with the model 100). However, the information in this section may not apply to all PowerBook models.

For this installation you will need to supply an HDI-30-pin to 25-pin Macintosh PowerBook SCSI adapter cable. Do not use a terminator.

NOTE: This cable is available in two versions; be certain that your cable is no longer than three feet long, and that you obtain a cable for connecting a PowerBook computer to a SCSI device, not for connecting a PowerBook computer to a desktop Macintosh computer.

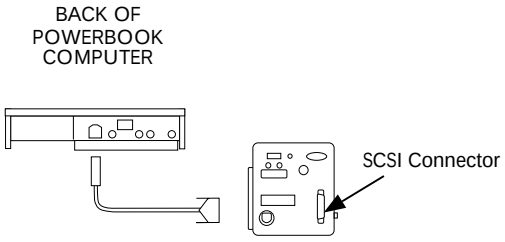


1. Turn off the Macintosh PowerBook computer.

   IMPORTANT: Later when you connect and disconnect the Macintosh PowerBook computer and the DCS 465 Camera Back on a regular basis, make sure the computer is off. Some software and peripherals check the SCSI connection periodically. If the Macintosh computer is on, and you connect the camera back while the SCSI connection is being used, the Macintosh computer may hang and you will need to restart.

2. Connect the AC battery charger/adapter to the camera back as described earlier in this chapter. Although this step is optional, we recommend it whenever the camera back is connected to a computer.

3. Attach the HDI-30-pin connector of your HDI-30-pin to 25-pin SCSI cable to the HDI-30 port on the back of the Macintosh PowerBook. Make sure the connector is well seated by pressing it into place firmly.
   IMPORTANT: Do not use a terminator.



4. Attach the other end of your HDI-30-pin to 25-pin SCSI cable to the SCSI connector on the back of the DCS 465 Camera Back.

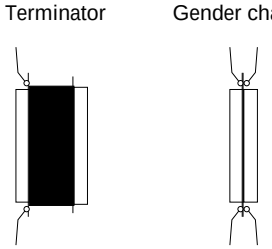
5. (Optional) Later, to disconnect the camera back from the Macintosh computer, shut down the computer. Then disconnect the SCSI cable from the camera back. Disconnect the SCSI cable from the Macintosh computer. Do not leave a SCSI cable with an empty connector/terminator dangling from your Macintosh computer.

Skip the next sections and continue at “Installing the KODAK Driver for Adobe Photoshop Software (Macintosh) and Calibration File” later in this chapter.

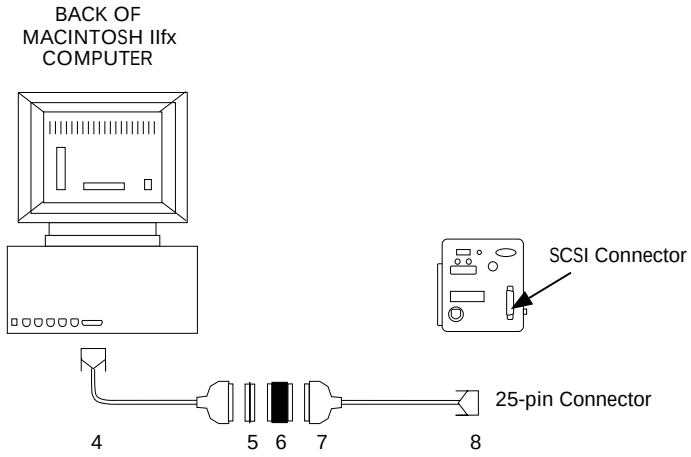
C. Follow these steps if no external devices are connected and you are using a Macintosh IIfx computer.

For this installation you will need to supply:

- A second 25-pin to 50-pin SCSI cable (two are needed, but only one is supplied with the DCS 465 Camera Back).
- A black SCSI terminator made especially for the Macintosh IIfx computer.
- A SCSI gender changer.



Follow the steps below to complete this connection.



1. Turn off the Macintosh IIfx computer.

   IMPORTANT: Later when you connect and disconnect the Macintosh IIfx computer and the DCS 465 Camera Back on a regular basis, make sure that the computer is off. Some software and peripherals check the SCSI connection periodically. If the Macintosh computer is on, and you connect the camera back while the SCSI connection is being used, the Macintosh computer may hang and you will need to restart.

2. Place the DCS 465 Camera Back in a convenient position next to your Macintosh IIfx computer.

3. Connect the AC battery charger/adapter to the camera back as described earlier in this chapter. Although this step is optional, we recommend it whenever the camera back is connected to a computer.

4. Attach the 25-pin connector of the 25-pin to 50-pin SCSI cable that you have supplied to the SCSI port on the back of the Macintosh IIfx computer. Make sure the connector is well seated by pressing it into place firmly, and then tighten both knobs on the cable connector.
5. Attach either end of the 50-pin gender changer to the open, 50-pin end of the SCSI cable attached to the Macintosh IIfx computer.
6. Attach your black terminator made especially for the Macintosh IIfx computer to the open connector on the 50-pin gender changer.
7. Attach the 50-pin connector on the 25-pin to 50-pin SCSI cable supplied with the camera back to the open end on the black terminator.
8. Attach the 25-pin connector on the SCSI cable to the SCSI connector on the back of the DCS 465 Camera Back.
9. (Optional) Later, to disconnect the camera back from the Macintosh computer, shut down the computer. Then disconnect one SCSI cable from the camera back. Disconnect the other SCSI cable from the Macintosh computer. Do not leave a SCSI cable with an empty connector/terminator dangling from your Macintosh computer.

Skip the next sections and continue at "Installing the KODAK Driver for Adobe Photoshop Software (Macintosh) and the Calibration File" later in this chapter.

DCS 465 Camera Back Used with Other SCSI Devices

Follow these steps if one or more external SCSI devices are already connected to your Macintosh computer; otherwise continue at the next section of this manual entitled "Installing the KODAK Driver for Adobe Photoshop Software (Macintosh) and the Calibration File."

Multiple SCSI devices are connected to the Macintosh computer in a chain. If the DCS 465 Camera Back is one of multiple SCSI devices connected to your Macintosh computer, it must be connected as the last device in the chain of SCSI devices since it only includes one SCSI connector.

The total cable length connecting all devices must not exceed 15 feet (4.6 meters).

You will need to determine if the connected SCSI devices are terminated or not. To do so, first look for an external SCSI terminator on the devices. Because some devices contain internal terminators, also check the instructions for your devices to determine if they are terminated internally, and if they are whether that termination is currently active.

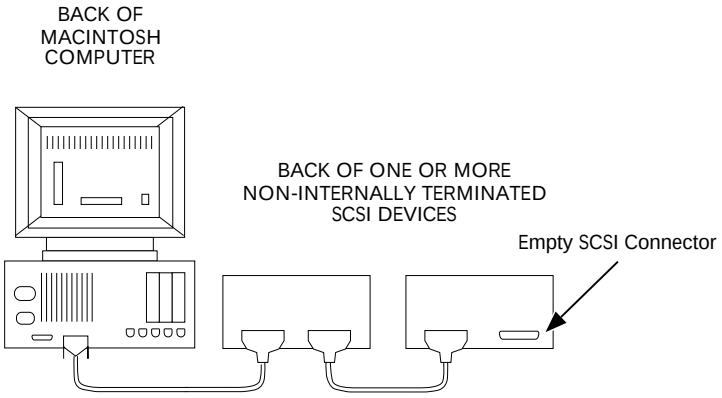
We provide two sets of instructions. Follow the first set (A) if none of the connected devices are terminated or if one of the devices is terminated externally. Follow the second set (B) if one of the devices — it should be the last device in the chain — is terminated internally.

A. Follow these steps if none of the connected devices are terminated or if one of the devices is terminated externally.

1. Turn off the Macintosh computer, and all connected SCSI devices.

   IMPORTANT: Later, when you connect and disconnect the Macintosh computer and the DCS 465 Camera Back on a regular basis, make sure that the computer and all devices are off. Some software and peripherals check the SCSI connection periodically. If the Macintosh computer is on, and you connect the camera back while the SCSI connection is being used, the Macintosh computer may hang and you will need to restart.

2. Place the DCS 465 Camera Back in a convenient position next to the last device in the SCSI chain of devices connected to your Macintosh computer.
3. Connect the AC battery charger/adapter to the camera back as described earlier in this chapter. Although this step is optional, we recommend it whenever the camera back is connected to a computer.
4. When you have completed part A or B of this step, the last device in the chain should have a cable (with no terminator) connected to one of its SCSI connector, and the other connector should be empty.



A. If there is an external SCSI terminator on an otherwise empty SCSI connector on the last device, remove it.

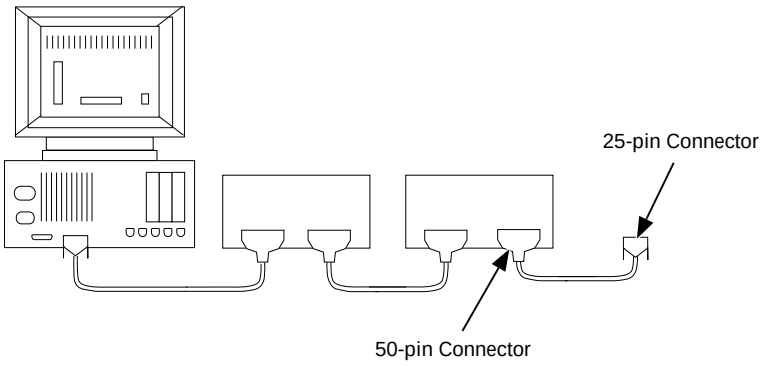
B. If there is an external SCSI terminator between the end of a cable and a SCSI connector on a device, remove the terminator, and then reconnect the cable. (Later, if you remove the DCS 465 Camera Back cable from your Macintosh computer, remember to replace this terminator.)

NOTE: If you have a Macintosh IIfx computer, you must use the appropriate SCSI terminator for that computer system (not supplied with the DCS 465 Camera Back).

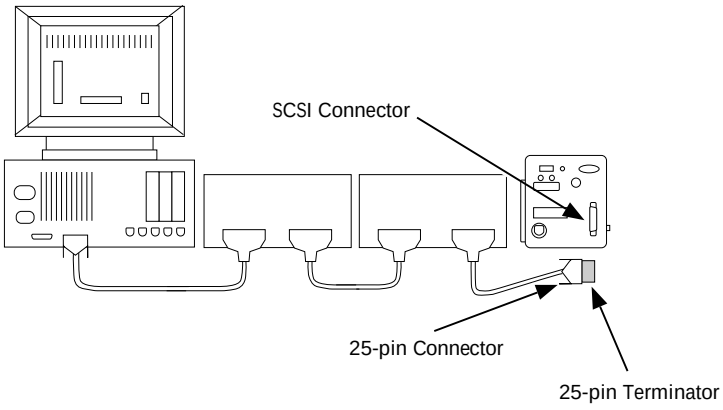
5. Select the SCSI cable with the 50-pin connector at one end and the 25-pin connector at the other end.

IMPORTANT: Use only the cable supplied with the DCS 465 Camera Back; do not use a substitute cable.

6. Connect the 50-pin connector to the empty connector on the last SCSI device in the chain. Make sure the connector is well seated by pressing it into place firmly, and then pinch the thin wire clamps over its base.



7. Attach the supplied 25-pin terminator to the other end of the SCSI cable and then to the DCS 465 Camera Back.



8. (Optional) Later, to disconnect the camera back from the Macintosh computer, shut down the computer and all external SCSI devices. Then restore the SCSI cables and terminator to the state they were in before the camera back was connected. Do not leave a SCSI cable with an empty connector dangling from a SCSI chain.

Skip the next section and continue at "Installing the KODAK Driver for Adobe Photoshop Software (Macintosh) and the Calibration File" later in this chapter.

B. Follow these steps if the last connected device is terminated internally.

1. Turn off the Macintosh computer, and all connected SCSI devices.

   IMPORTANT: Later when you connect and disconnect the Macintosh computer and the DCS 465 Camera Back on a regular basis, make sure that all devices are off. Some software and peripherals check the SCSI connection periodically. If the Macintosh computer is on, and you connect the camera back while the SCSI connection is being used, the Macintosh computer may hang and you will need to restart.

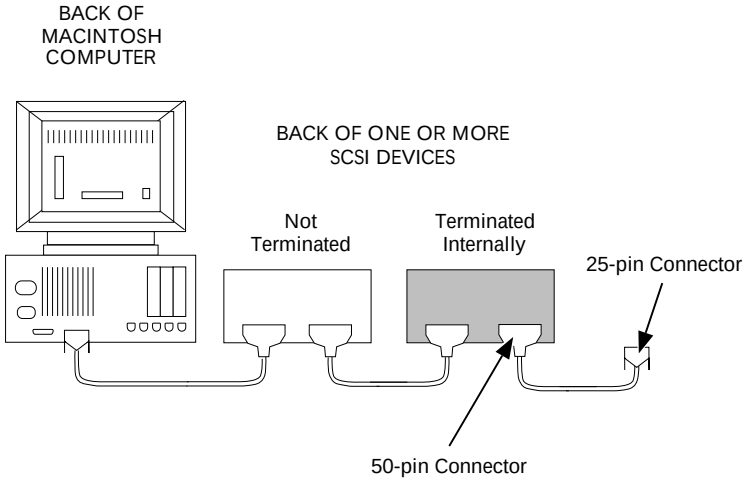
2. Place the DCS 465 Camera Back in a convenient position next to the last device in the SCSI chain of devices connected to your Macintosh computer.

3. Connect the AC battery charger/adapter to the camera back as described earlier in this chapter. Although this step is optional, we recommend it whenever the camera back is connected to a computer.

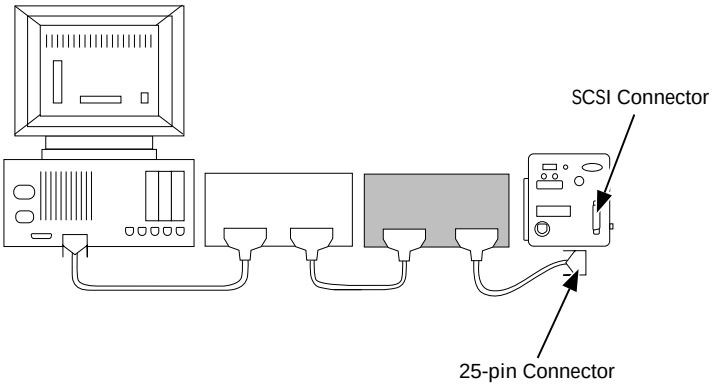
4. Select the SCSI cable with the 50-pin connector at one end and the 25-pin connector at the other end.

   IMPORTANT: Use only the cable supplied with the DCS 465 Camera Back; do not use a substitute cable.

5. Connect the 50-pin connector to the empty SCSI connector of the device that is terminated internally. Make sure the connector is well seated by pressing it into place firmly, and then pinch the thin wire clamps over its base.



6. Attach the other end of the SCSI cable to the SCSI connector on the DCS 465 Camera Back.



7. (Optional) Later, to disconnect the camera back from the Macintosh computer, shut down the computer and all external SCSI devices. Then restore the SCSI cables and terminator to the state they were in before the camera back was connected. Do not leave a SCSI cable with an empty connector dangling from a SCSI chain.

Continue at the next section.

Installing the KODAK Driver for Adobe Photoshop Software (Macintosh) and the Calibration File

NOTE: We assume that you are familiar with Adobe Photoshop; if you are not, refer to the instruction manuals that accompany that product.

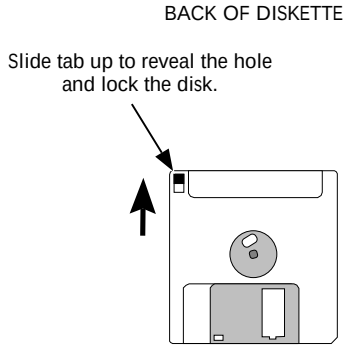
In this section you will install the special software driver provided with the camera back for use with Adobe Photoshop software as well as a calibration file for your camera back. Then you can use the driver to ensure that the camera back has the latest firmware (camera back control programming), and to format a PCMCIA card(s). Once the software is installed, you can also use it regularly to move images and sound files from the DCS 465 Camera Back to your Macintosh computer by acquiring them while running your copy of Adobe Photoshop, as described in chapter 7.

Installing the software is a onetime action; you complete these steps once, and do not repeat them each time you want to acquire images. The DCS 465 Camera Back can remain connected to the AC battery charger/adapter while you complete these steps.

1. If your Macintosh computer is not on, turn it on now; after a short wait you will be in the Finder. (If your Macintosh computer has been configured to open applications other than the Finder, return to the Finder now. If Photoshop is running, quit that application.)
2. Locate the diskette labeled "KODAK Driver for ADOBE PHOTOSHOP Software for use with KODAK Professional DCS 465 Digital Camera Backs," and the diskette labeled "KODAK DCS 465 Calibration (CAL) File: Macintosh."

   IMPORTANT: Make a backup of the calibration diskette; you cannot move images into Adobe Photoshop without the proper CAL file.

3. If the diskettes are not locked, lock them by sliding their tabs on the back to reveal a small hole. This will prevent the contents of the disk from being changed inadvertently, and may aid in preventing the spread of computer viruses to this diskette.



4. Place the diskette labeled "KODAK Driver for ADOBE PHOTOSHOP Software for use with KODAK Professional DCS 465 Digital Camera Backs" into the internal drive of your computer.
5. Double-click on the READ ME file icon on the diskette and read its contents — the latest information on the camera back; then choose QUIT from the FILE menu to return to the Finder.
6. Complete part A for supported Photoshop versions before version 2.5, and part B for Photoshop versions 2.5 and later.
   A. Drag the KODAK DCS 465 file, any and all DCS465.BIN files and any files ending in ".cal" into the folder on your hard disk containing the Photoshop PS PREFS file; wait while the files are copied.

      NOTE: If you do not place these files in the same folder as PS PREFS, you will not be able to acquire images.

B. Follow directions in the Photoshop manual regarding placement of plug-in modules. For example, with Photoshop version 2.5 and 3.0, drag the KODAK DCS 465 and any and all DCS465.BIN and ".cal" files into the PLUG-INS folder created when you installed this version of Photoshop (or into another folder you have designated with PREFERENCES to hold plug-in modules). For Photoshop 2.5, be certain that the files are not placed within another folder inside the PLUG-INS folder. Wait while the files are copied.

7. Eject the KODAK DCS 465 DRIVER disk by dragging its icon to the TRASH icon.
8. Store the KODAK DCS 465 DRIVER disk for possible future use.
9. Place the diskette labeled "KODAK DCS 465 Calibration (CAL) File: Macintosh" into the internal drive of your computer.
10. Copy the calibration file onto your hard disk into a location specified in either part A or part B of step 6 above. The filename of your calibration file is your camera back serial number followed by a ".cal" suffix. For example, if the serial number of your camera back is 465-1006, the calibration filename would be 465-1006.cal.

NOTE: You should ensure that the gamma for your monitor is calibrated properly per instructions accompanying Adobe Photoshop; if you do not, images may be consistently too light or too dark.

Inserting and Removing a PCMCIA Card

This section describes how to insert and remove a PCMCIA card. PCMCIA cards are not supplied with the camera back, but are available as optional equipment. Refer to chapter 1, to the READ ME file on the supplied software driver diskettes, and to the appendix "Optional Equipment & Spare Parts List" for additional information on supported cards.

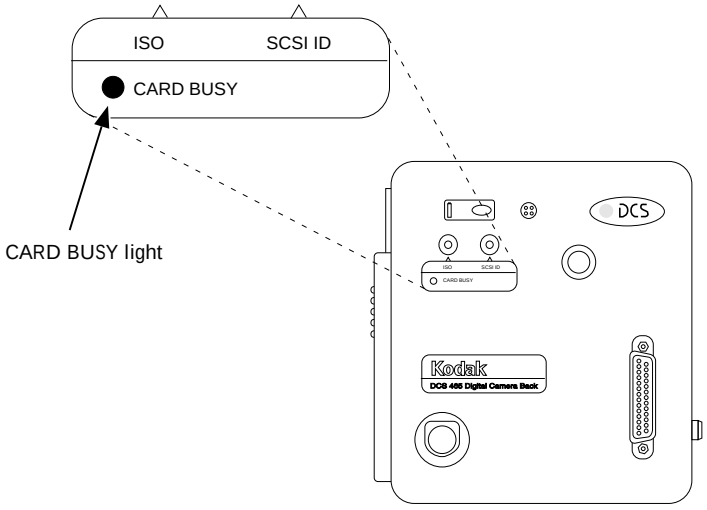
A PCMCIA card can be inserted or removed at any time, except when the red "Card Busy" light on the camera back is blinking. You can insert/remove a card while in the field, while connected to the AC battery charger adapter, while connected to a computer and/or while the camera back is awake or asleep.

IMPORTANT: When the red Card Busy light is blinking, data is being read from or written to the PCMCIA card, for example just after you take a picture, or later when you move data from the camera back to a computer. If the card is removed while the light is blinking, you may lose the current image, and may lose other images as well.

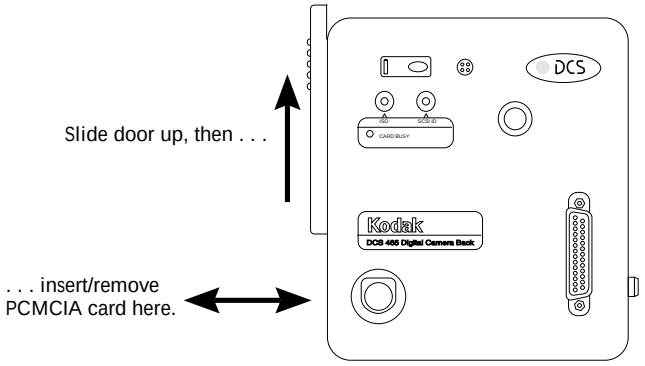
Inserting a PCMCIA Card

Follow these steps to insert a PCMCIA card. (If a card is currently installed, there is no need to follow these steps now, although if you are unfamiliar with the use of this type of card you may wish first to remove the card as described in the next section, and then to return here to reinstall the card.)

1. Be certain that the red “Card Busy” light is not blinking before you continue.

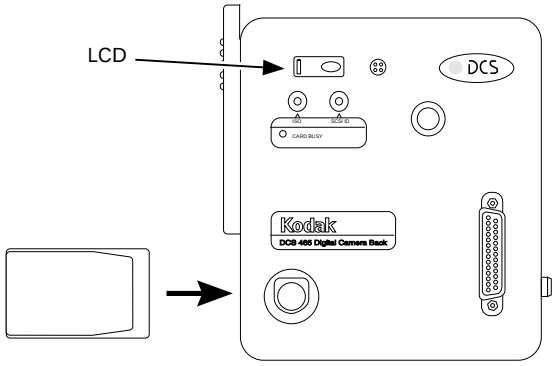


2. While looking at the camera back, open the door on the left edge by sliding the door up.

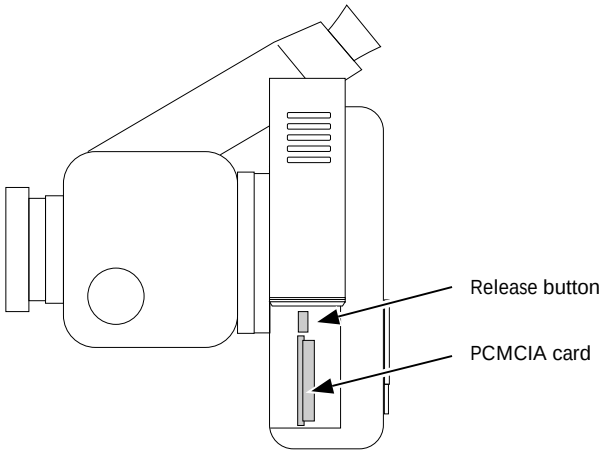


3. **NOTE**: As you complete this step, do not be startled when the red Card Busy light blinks and you hear noise from the camera back; this is normal operation when a PCMCIA card is inserted.

Insert your PCMCIA card (not supplied with the camera back), by sliding it — thin edge first — into the empty slot, and pushing it firmly into place.



When properly installed, the end of the PCMCIA release button should be flush with the edge of the card.



4. Slide the door down over the PCMCIA card compartment.

   NOTE: The camera back LCD (see the first figure in the previous step) may show "E6," a code indicating that the PCMCIA card is not formatted. That is a normal condition at this point in the preparation of the camera back. In a later section of this chapter you will format the PCMCIA card.

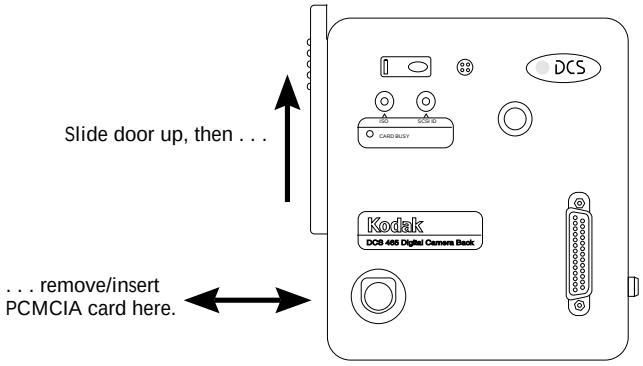
Removing a PCMCIA Card

Follow these steps to remove a PCMCIA card.

1. Be certain that the red "Card Busy" light is not blinking before you continue.

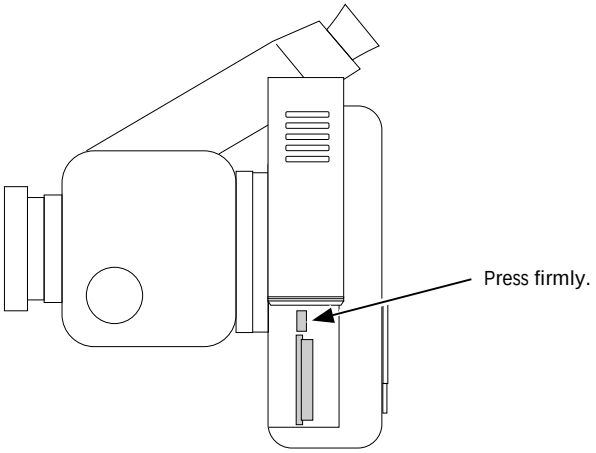
   IMPORTANT: When the red Card Busy light is blinking, data is being read from or written to the PCMCIA card, for example just after you take a picture, or later when you move data from the camera back to a computer. If the card is removed while the light is blinking, you may lose the current image, and may lose other images as well.

2. While looking at the camera back, open the door on the left edge of the camera back by sliding the door up.



3. **CAUTION**: As you complete this step, the PCMCIA card is ejected from the camera back; for that reason, keep your hand in front of the door opening to prevent the fragile card from falling out of the camera back. If a PCMCIA card is dropped, you may destroy it, resulting in the loss of all of your data on the card.

   Firmly press the rectangular button at the top of the opening inside the door; this action releases the PCMCIA card from its connector and ejects the card from the camera back.



4. Remove the card from the camera back by grasping it at the top and bottom with your thumb and forefinger and pulling it completely from the camera back.
5. Slide the door down over the empty card compartment.

Accessing the KODAK Driver for Adobe Photoshop Software (Macintosh)

Repeat the steps below each time you want to access the KODAK Driver for Adobe Photoshop software.

1. If the DCS 465 Camera Back and your Macintosh computer are not connected, turn the computer off and connect them now by following the directions in "Making the SCSI Connection" earlier in this chapter.

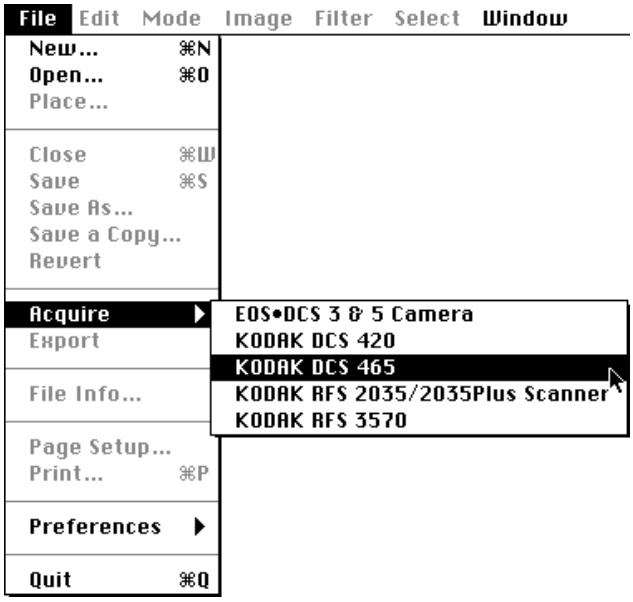
   NOTE: You can leave your camera connected to the camera back while you make this connection. Refer to chapter 9 for an explanation of supported configurations.

2. Connect the AC battery charger/adapter to the camera back as described earlier in this chapter. (Although this step is optional, we recommend it whenever the camera back is connected to a computer.)

3. If your Macintosh computer is off, turn it on.

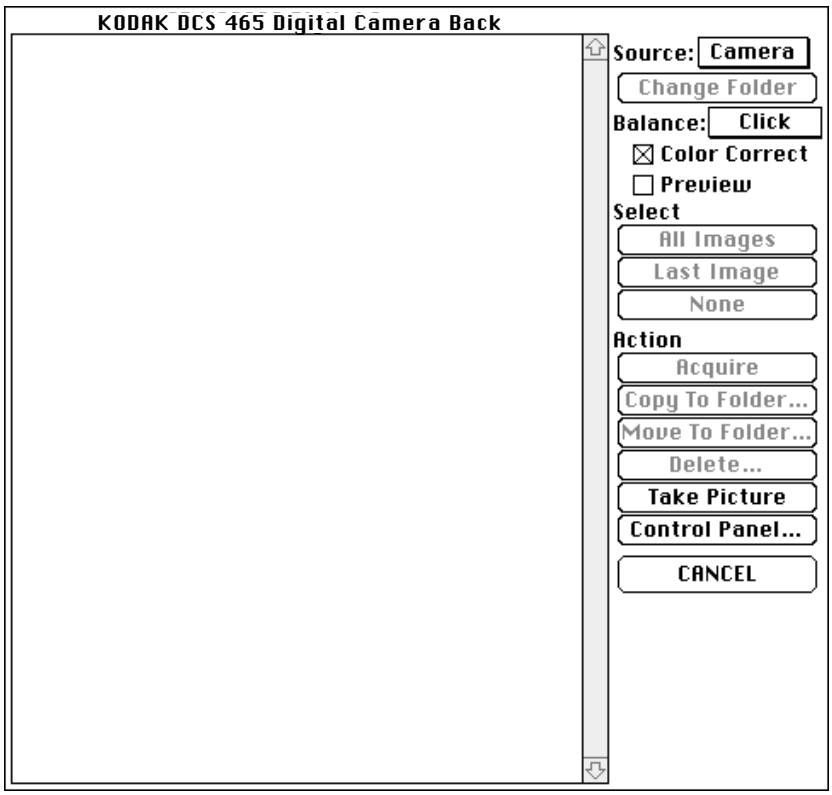
4. Run Adobe Photoshop.

5. Pull down the Adobe Photoshop FILE menu and choose KODAK DCS 465 from the ACQUIRE submenu. (The ACQUIRE submenu may show other options.)



6. Wait as the image window appears.

   (The first time you choose this driver, a file named DCS 465 PREFERENCES is created in your SYSTEM FOLDER.)



NOTE: Instead of the driver image window above you may see a message indicating that the Camera Back was not found. If you do, follow the troubleshooting suggestions in the message. Additional information regarding this and other messages appears in the "Messages" section of chapter 10.

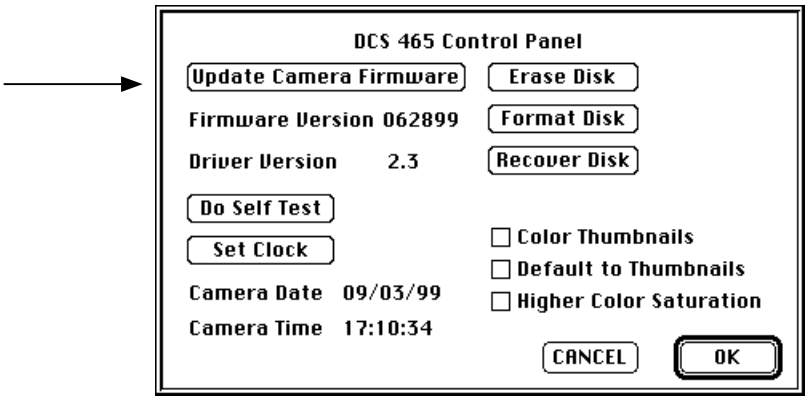
Updating DCS 465 Camera Back Firmware

The DCS 465 Camera Back incorporates nonvolatile memory that contains controls — called firmware — for most features of the camera back. You can update that firmware yourself, which means you can keep the camera back up-to-date as changes are made to the firmware. (Refer to the appendix "Updating Your Kodak Software Driver," for additional information.) You can also perform some troubleshooting without sending the camera back to a service center, as described in the camera back troubleshooting section of this manual.

By following the steps below to update camera back firmware the first time you use the Photoshop driver, you will ensure that the camera back contains the most current version of the firmware. You do not need to update camera back firmware each time you use the driver.

NOTE: To complete these steps, the camera back must be connected to your Macintosh computer as described earlier in this chapter. We also assume that Adobe Photoshop is currently running on your Macintosh computer, and that you have accessed the driver image window by choosing KODAK DCS 465 from the ACQUIRE submenu of the Adobe Photoshop FILE menu.

1. Click the CONTROL PANEL button of the driver image window. You will see the dialog box below.



2. Click the UPDATE CAMERA FIRMWARE button.
3. Wait while firmware is copied to the camera back.
   NOTE: You may see a message asking you to use the AC battery charger/ adapter and to wait for several minutes; if you do see this message, follow the instructions in the message and wait (to allow the battery to charge) before clicking the UPDATE CAMERA FIRMWARE button again.
4. Click OK to close the Control Panel and return to the driver image window.

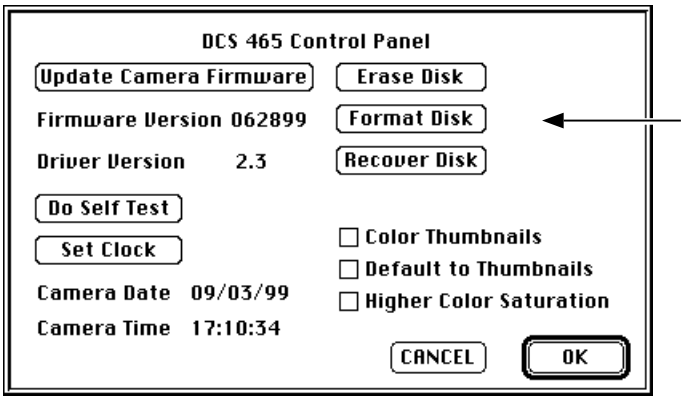
Formatting a PCMCIA Card

This section describes how to format a PCMCIA card, an action you should take now as you start to use the camera back, and may need to repeat later on an occasional basis when you want to format another card, or to reformat a card you have been using with the DCS 465 Camera Back.

NOTE: To complete these steps, the camera back must be connected to your Macintosh computer as described earlier in this chapter. We also assume that Adobe Photoshop is currently running on your Macintosh computer, and that you have accessed the driver image window by choosing KODAK DCS 465 from the ACQUIRE submenu of the Adobe Photoshop FILE menu.

A PCMCIA card used for image storage must be (DOS) formatted with the camera back using the supplied driver as described in this section.

1. Click the CONTROL PANEL button of the image window. You will see the dialog box below.



2. **IMPORTANT:** As you complete this step, keep in mind that this operation will erase all existing data on the PCMCIA card.

   If you have a unformatted PCMCIA card in the camera back, click the FORMAT DISK button, and click the response you want on the confirmation box that appears.

3. Wait as the software formats the card.
4. If you have more than one card to format, you can remove the current card as described earlier in this chapter, insert another, and click the FORMAT DISK button again to format the new card. You can also use this operation to reformat a card that you have been using with the camera back.
5. Click OK to close the Control Panel.
6. Click CANCEL to leave the driver image window.
7. Quit Adobe Photoshop.

Quitting — Disconnecting the DCS 465 Camera Back from the Computer

Complete these steps when you have completed your work with the DCS 465 Camera Back and the Macintosh computer.

1. If Photoshop is running, quit that application now.
2. Choose SHUT DOWN from the Macintosh SPECIAL menu.
3. Turn off other SCSI devices if present.
4. (Optional) Disconnect the AC battery charger/adapter if it is connected.
5. (Optional) Disconnect the DCS 465 Camera Back from the computer.

   CAUTION: Do not disconnect the camera back from the computer while the driver image window is open, or even while the computer is on. Doing so may result in the loss of data from the PCMCIA card in the camera back or from the hard disk in your computer. Instead, turn off all equipment in the order described above before disconnecting the camera back.

Continue in chapter 6 for a description of how to take pictures with the camera back and your camera.

5

Preparing the DCS 465 Camera Back for Use with Your PC

This chapter describes the series of steps you follow to prepare the KODAK Professional DCS 465 Digital Camera Back (DCS 465 Camera Back) for use in a PC environment. This includes how to:

- Connect the DCS 465 Camera Back to your camera.
- Charge the battery and use the AC battery charger/adapter.
- Install a SCSI Host Adapter.
- Set the SCSI ID on the DCS 465 Camera Back.
- Make the SCSI connection between the DCS 465 Camera Back and your PC.

- Install the driver for TWAIN-compliant PC applications and the camera back calibration (CAL) file on your PC.
- Insert (and remove) your PCMCIA card into the DCS 465 Camera Back.
- Access the driver for TWAIN-compliant PC applications.
- Update camera back firmware.
- Format a PCMCIA card for use with the camera back.

IMPORTANT: We assume that you are familiar with the operation of your PC. If you are not, refer to the manuals that accompany that computer before continuing.

Before you continue, if you have not completed and returned the enclosed Warranty Registration card, please do so now.

> **CAUTION:** In this chapter you will connect the camera back to your computer. Once connected, do not disconnect the camera back from the computer while using the supplied software, or even while the computer is on. Doing so may result in the loss of data from the PCMCIA card in the camera back or from the hard disk in your computer. Instead, turn off all equipment in the order described at the end of this chapter before disconnecting the camera back.

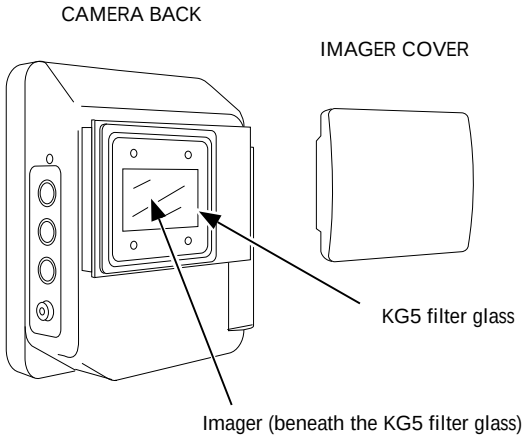
Connecting the DCS 465 Camera Back to Your Computer

Follow the steps in this section to connect the DCS 465 Camera Back to your camera.

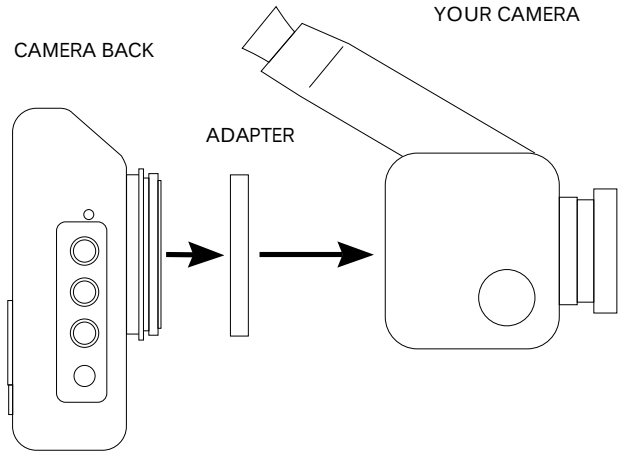
> **CAUTION:** As you complete these steps handle the camera back — and especially the imager – with extreme caution. A damaged imager can result in a very expensive repair not covered by the warranty.

1. Remove the imager cover from the camera back by inserting a thumb beneath a corner of the cover and separating it from the camera back.

   IMPORTANT: Retain the imager cover and immediately replace it at any time that you remove the camera back from your camera.



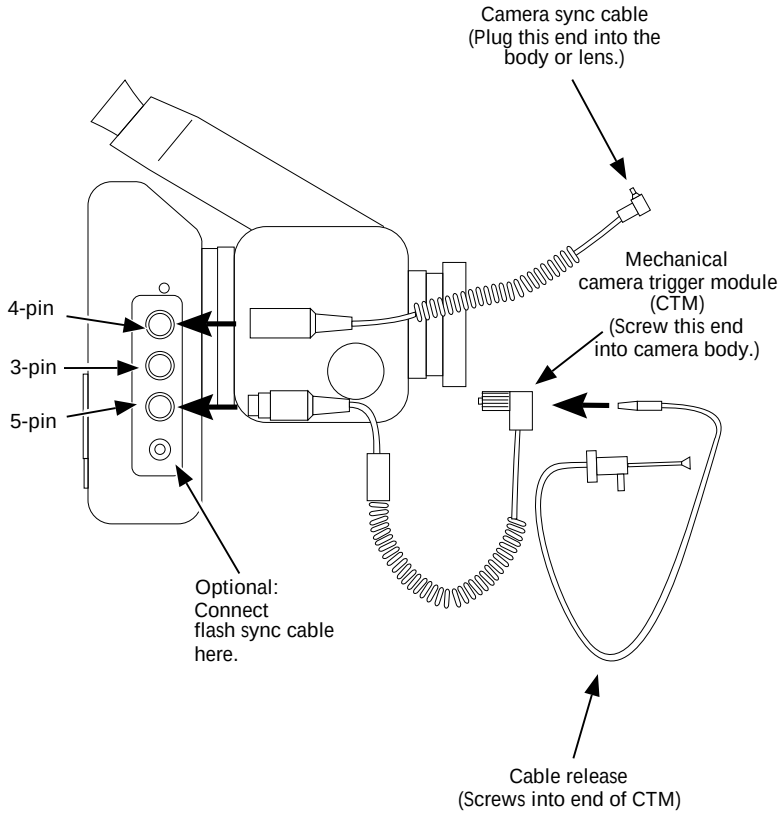
2. Mount the camera back to your camera as shown below for a typical configuration; first mount the adapter to your camera, and then mount the camera back to the adapter.



3. Follow part A of this step if you are working with a mechanically tripped camera, and part B if you are working with an electrically tripped camera. The individual connections can be made in any order.

A. Mechanically tripped camera.

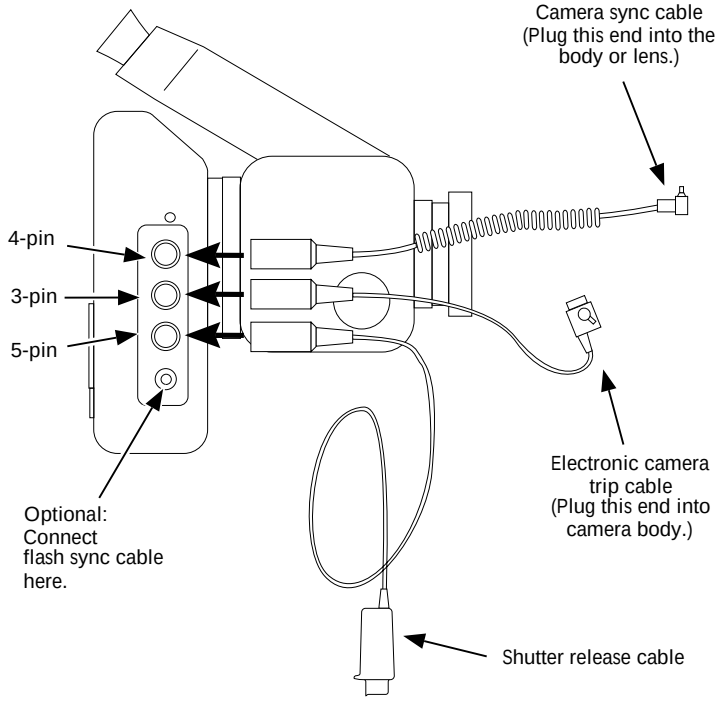
CAUTION: To simplify making these connections, each cable has unique connectors at both ends. Cables can only be plugged into one connector. Therefore, do not force the end of any cable into any connector; instead, all cables should fit comfortably into their connectors.



NOTE: Your cable release (not supplied) must have a "throw" of at least 5/8-inch in order to extend far enough into the CTM to trip the camera. The throw is the distance the pin extends from the end of a cable release when you fully depress the cable release button.

B. Electrically tripped camera.

CAUTION: To simplify making these connections, each cable has unique connectors at both ends. Cables can only be plugged into one connector. Therefore, do not force the end of any cable into any connector; instead, all cables should fit comfortably into their connectors.



Using the AC Battery Charger/ Adapter

Keep the following battery considerations in mind as you use the camera back.

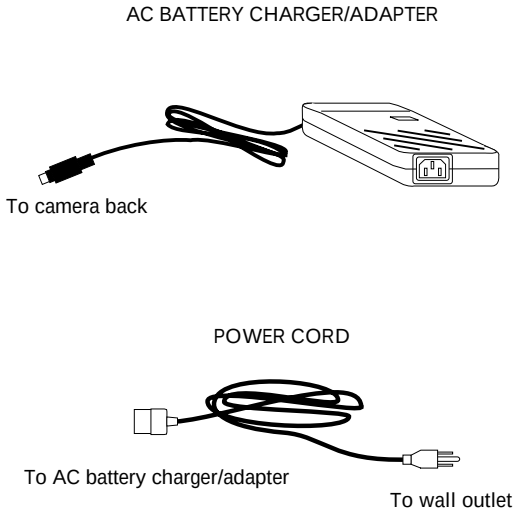
- **IMPORTANT**: Do not attempt to remove the battery; it is not a customer serviceable part.
- The DCS 465 Camera Back incorporates a single, rechargeable nickel hydride battery that powers the camera back.
- In typical shooting situations, a fully-charged battery provides power for up to 150 frames.
- You can operate the camera back while connected to the supplied AC battery charger/adapter, or you can recharge the battery with the adapter and then use the camera back in the field without the adapter.
- The adapter will run the camera back continuously while it is charging the battery.
- If you are using the camera back in an environment in which a power outlet is available, we recommend that you operate the camera back while connected to the AC battery charger/adapter as described below.
- Refer to chapter 9 for information on the effect of temperature extremes on battery operation.

Charging the Battery

You should charge the battery for at least one hour before using the camera back for the first time, and thereafter on a regular basis as needed. Charging the battery for at least one hour will ensure that you begin shooting with a fully charged battery, and that you obtain the most images per charge.

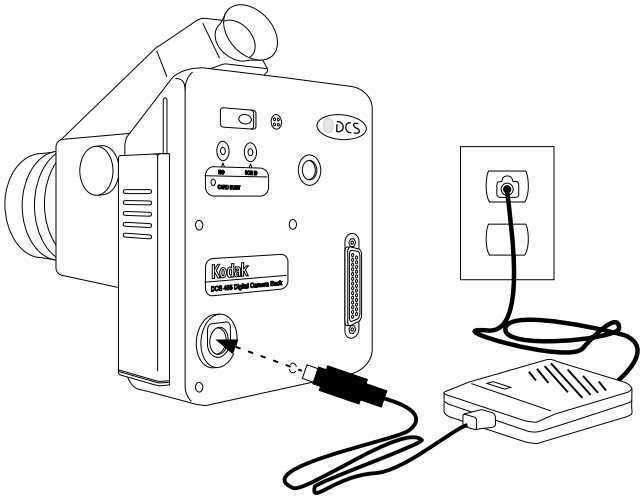
Follow these steps to charge the battery.

1. Locate the AC battery charger/adapter and power cord supplied with the camera back.



2. Plug the appropriate end of the power cord into the AC battery charger/adapter.
3. Plug the other end of the power cord into a wall outlet.

4. Plug the AC battery charger/adapter into the DCS 465 Camera Back as shown below.



5. The first time the camera back is used, allow the battery to charge for at least one hour.

   SPECIAL CHARGING INSTRUCTIONS: Whenever the battery is dead (unusual random characters appear on the camera back LCD):

   A. Charge the battery for 15 minutes.

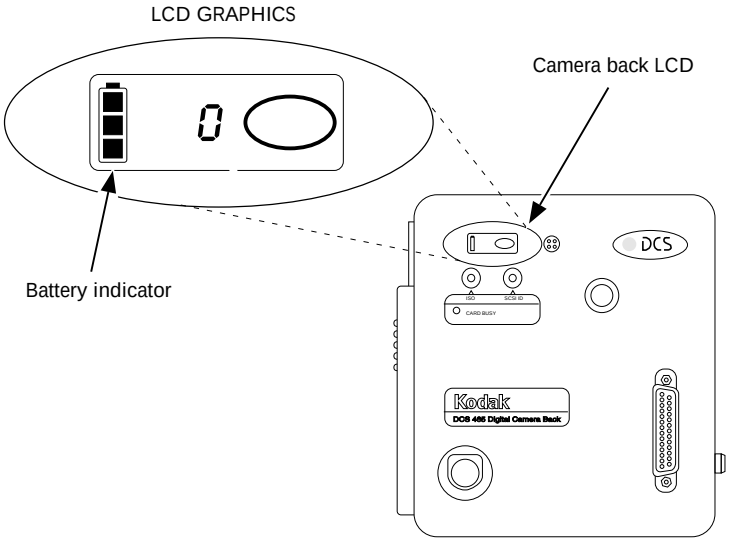
   B. Disconnect, then reconnect, the AC adapter.

   C. Wait five minutes.

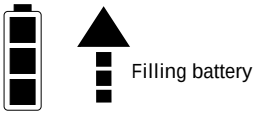
   D. If unusual characters still appear, repeat steps B and C as needed.

   E. Allow the battery to charge for one hour.

IMPORTANT: An LCD at the top left corner of the camera back displays a battery icon.

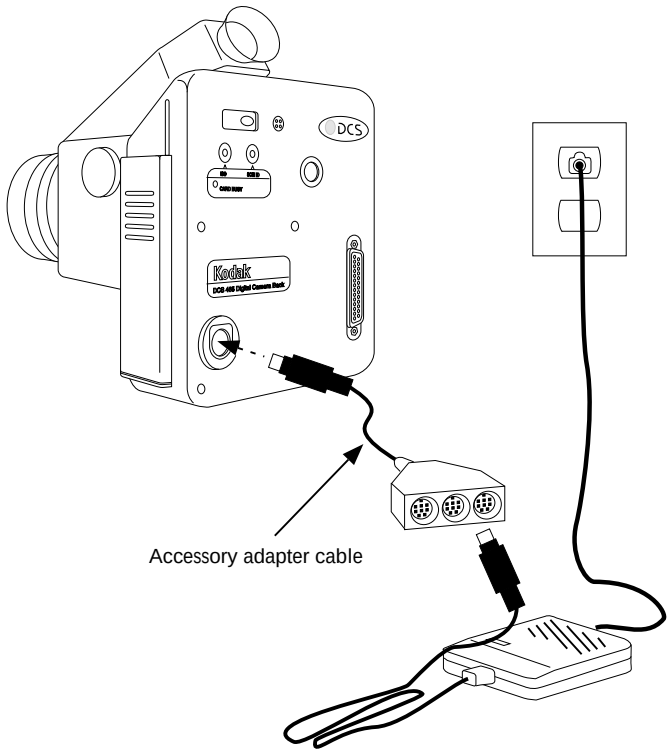


While the battery is charging, the three segments of this icon light repeatedly in turn from bottom to top; when the battery is fully charged all three remain lit.



When the camera back is used without the adapter, the number of lit segments indicates the charge state of the battery. When the bottom segment is blinking, the battery needs recharging.

6. (Optional) Use the supplied accessory adapter cable as shown in the following illustration. Doing so allows simultaneous use of the AC battery charger/adapter and other accessories as available (refer to Appendix D for ordering information.)



Setting the SCSI ID on the DCS 465 Camera Back

In this section you will set the SCSI identification (ID) number for the DCS 465 Camera Back. Each SCSI device connected to the same computer must have a different ID number.

IMPORTANT: This section assumes that the camera back and the computer are not currently connected. You should never change the SCSI ID on the DCS 465 Camera Back when it is connected to a computer.

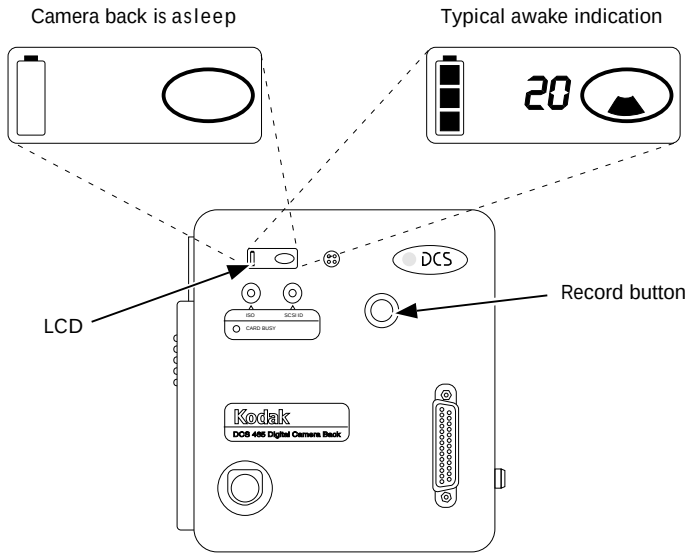
1. Shut down your PC.
2. If SCSI devices other than the DCS 465 Camera Back are connected to your PC, determine their SCSI identification numbers so that you can select a different number for the DCS 465 Camera Back. If necessary, refer to the instructions for those devices to determine how to find their numbers.

   NOTE: Since you may connect the camera back to different computers, or since you may change the external devices connected to a PC you regularly use with the camera back, you should ensure that the DCS 465 Camera Back has a unique SCSI ID each time you connect it to a PC.

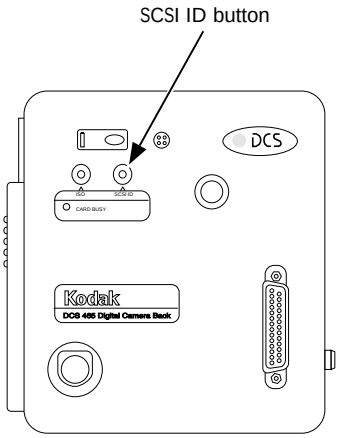
3. Wake (see illustration below) the DCS 465 Camera Back using one or the other of these two methods.

   A. Operate while connected to the AC battery charger/adapter; the camera back is continually awake in this state.

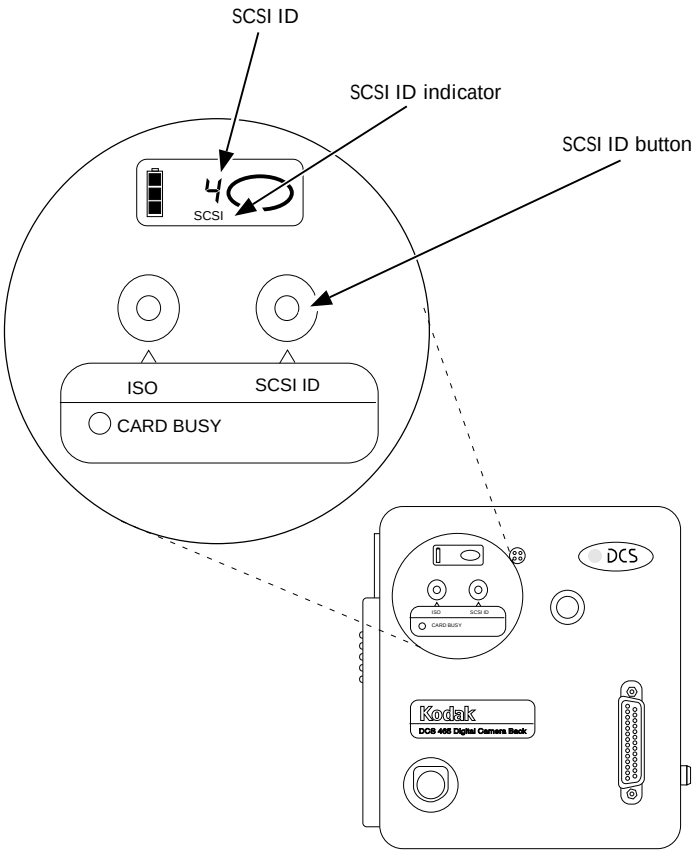
   B. When not connected to the adapter, wake the camera back by lightly pressing the record button; with an electrically tripped camera you can also quickly tap the shutter release cable button. (The camera back sleeps after several seconds of inactivity; as you complete these steps reawaken the camera back as needed.)



4. Locate the indented button on the back of the DCS 465 Camera Back labeled “SCSI ID.”



5. Press the SCSI ID button once with your fingertip or other blunt object; this action wakes SCSI mode. The characters “SCSI” (called the SCSI indicator), as well as a single value from 0 to 7, “PC,” and “PP” appear on the camera back LCD. That value is the current SCSI ID of the DCS 465 Camera Back.



6. While “SCSI” still appears on the LCD, you change the current SCSI ID by pressing the SCSI ID button repeatedly. The ID rotates through the values 0 to 7, “PC,” and “PP.” Stop when you have the SCSI ID you want.

   IMPORTANT: Do not use a number currently assigned to any other connected SCSI device. Do not assign the number used by your SCSI host adapter. (Refer to “Making the SCSI Connection” later in this chapter if you are uncertain about the adapter.) Consult your SCSI host adapter manual to see if other SCSI IDs should not be used — for example do not use numbers 6 or 7 if you are using a Future Domain SCSI Host Adapter card.

   A DCS 465 Camera Back set to a SCSI ID currently in use by another connected SCSI device may not respond to the PC; instead, the DCS 465 Camera Back will flash the SCSI indicator on the camera back LCD. If this occurs, reset the SCSI ID on the DCS 465 Camera Back as described in this section, and try again.

   “PC” SETTING FOR LAPTOP CUSTOMERS: Use the “PC” SCSI ID setting only if you will be connecting the camera back to a laptop computer using a PCMCIA-to-SCSI II adapter (such as the New Media Bus Toaster), to connect the PCMCIA slot on your laptop (not the camera back) to the SCSI connector on the camera back. “PC” sets the SCSI ID of the camera back to 1 and turns on active termination in the camera back.

   (Later, when laptop users install and access the software driver, you should use the Kodak TWAIN ASPI driver.)

   When you finish with the camera back in “PC” mode, take the camera back out of “PC” mode, turn off the computer and camera back. If left in “PC” mode, a fully charged battery will be exhausted in approximately eight hours since the camera back can not change to low power mode when this SCSI setting is active.

   “PP” SETTING: the “PP” setting, although it appears, is not currently supported and should not be selected.

Installing a SCSI Host Adapter

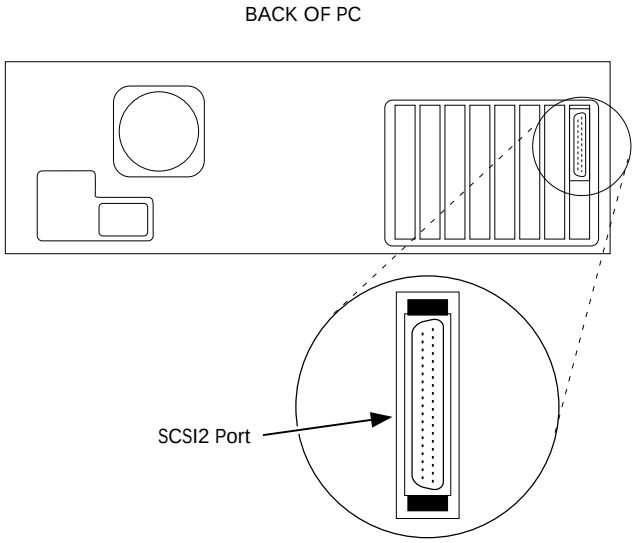
The DCS 465 Camera Back connects to your PC at a SCSI port provided by installing one of the supported SCSI host adapter cards described in chapter 1. If your PC already has a supported card installed, continue at the next section, “Making the SCSI Connection.” Otherwise continue below.

> **CAUTION:** Only trained and qualified technical personnel should perform the following procedure. You should contact a computer service professional to configure and install an ASPI host adapter card such as those available from Adaptec, Inc. running EZ-SCSI 3.0 or later or a Future Domain SCSI Host Adapter card. Customers with laptop computers can use a PCMCIA-to-SCSI adapter (such as the New Media Bus Toaster), as described later in this chapter. The installer should read all manufacturers’ instructions for both the computer and the host adapter before installing the adapter in your computer.

For Qualified Technical Personnel Only

1. Turn off the power to the computer and all peripherals (turn off the computer first).
2. If the termination power setting on your SCSI host adapter is disabled, change its setting to enable it.

3. Install the SCSI Host Adapter card for your PC according to the manufacturer's installation instructions. When installation is complete, a SCSI2 connector should be available on the back of your PC, as shown in one example below. Different PCs have different connectors. The figures in this chapter are intended to illustrate a typical PC.



Making the SCSI Connection

The DCS 465 Camera Back is a non-terminated SCSI device that connects to your PC at a SCSI2 connection on your PC. In normal usage you may connect and disconnect the DCS 465 Camera Back from the PC on a regular basis; for this reason you may want to position your computer so that its SCSI2 connector is readily accessible.

Continue below at "DCS 465 Camera Back as the Sole SCSI Device" (this page), at "DCS 465 Camera Back Used with Other SCSI Devices," or at "DCS 465 Camera Back Used with a Laptop" as appropriate to match your intended configuration.

DCS 465 Camera Back as the Sole SCSI Device

1. Turn off the PC.

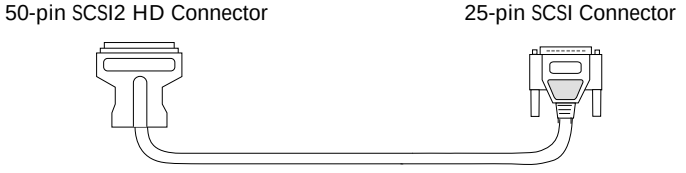
   IMPORTANT: Later when you connect and disconnect the PC and the DCS 465 Camera Back, make sure that the PC is off.

2. Place the DCS 465 Camera Back in a convenient position next to your PC.

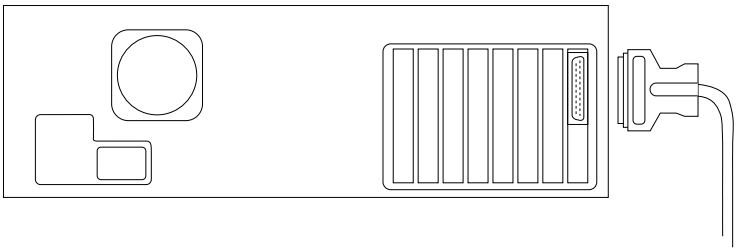
3. Connect the AC battery charger/adapter to the camera back as described earlier in this chapter. Although this step is optional, we recommend it whenever the camera back is connected to a computer.

4. Select the SCSI cable with the 50-pin SCSI2 HD connector at one end and the 25-pin SCSI connector at the other end.

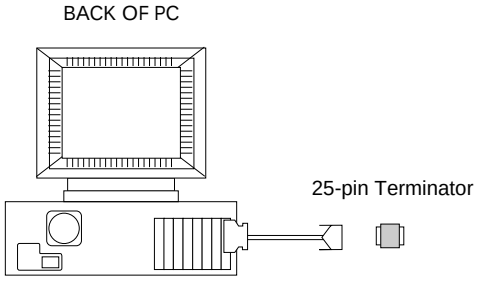
   IMPORTANT: use only the cable supplied with the camera back; do not use a substitute cable.



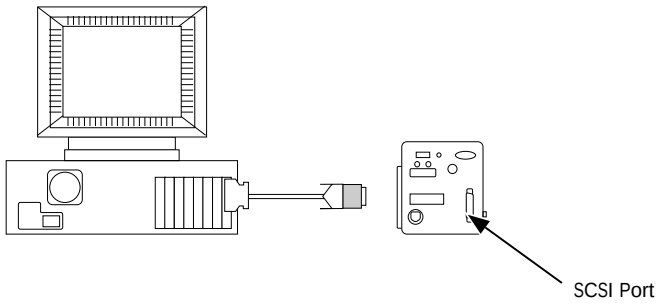
5. Attach the 50-pin SCSI2 connector to the SCSI2 port on the back of the PC. Make sure the cable connector is well seated by pressing it into place firmly, so that the spring-clips on the connector snap onto the SCSI port.



6. Attach the appropriate end of the supplied 25-pin SCSI terminator to the open 25-pin end of the SCSI cable you just attached to your PC.



7. Attach the other end of the cable (25-pin SCSI connector) to the SCSI port on the DCS 465 Camera Back.



8. (Optional) Later, to disconnect the camera back from the PC, shut down the PC. Then disconnect the terminator from the camera back. Disconnect the SCSI cable from the PC. Do not leave a SCSI cable with an empty connector dangling from your PC.

Skip the next section and continue at "KODAK Drivers for TWAIN-Compliant PC Applications" later in this chapter.

DCS 465 Camera Back Used with Other SCSI Devices

NOTE: If other external SCSI devices are connected to your computer, you may need to obtain a SCSI terminator to complete these steps.

Follow these steps if one or more external SCSI devices are already connected to your PC; otherwise, continue at the next section of this manual entitled "KODAK Drivers for TWAIN-Compliant PC Applications" later in this chapter.

Multiple SCSI devices are connected to a PC in a chain. If the DCS 465 Camera Back is one of multiple SCSI devices connected to your computer, it must be connected as the last device in the chain of SCSI devices since it only includes one SCSI connector.

The total cable length connecting all devices must not exceed 15 feet (4.6 meters).

You will need to determine if the connected SCSI devices are terminated or not. To do so, first look for an external SCSI terminator on the devices. Because some devices contain internal terminators, also check the instructions for your devices to determine if they are terminated internally, and if they are whether that termination is currently active.

We provide two sets of instructions. Follow the first set (A) if none of the connected devices are terminated or if one of the devices is terminated externally. Follow the second set (B) if one of the devices — it should be the last device in the chain — is terminated internally.

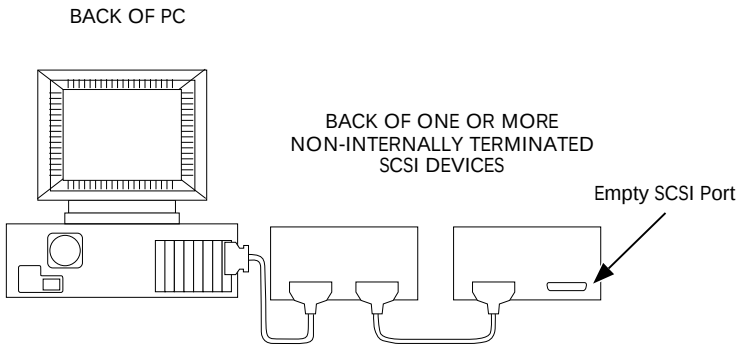
A. Follow these steps if none of the connected devices are terminated or if one of the devices is terminated externally.

1. Turn off the PC and all connected SCSI devices.

   IMPORTANT: Later, when you connect and disconnect the PC and the DCS 465 Camera Back on a regular basis, make sure that all devices are off.

2. Place the DCS 465 Camera Back in a convenient position next to the last device in the SCSI chain of devices connected to your PC.

3. Connect the AC battery charger/adapter to the camera back as described earlier in this chapter. Although this step is optional, we recommend it whenever the camera back is connected to a computer.
4. When you have completed part A or part B of this step, the last device in the chain should have a cable (with no terminator) connected to one of its SCSI ports, and the other port should be empty.



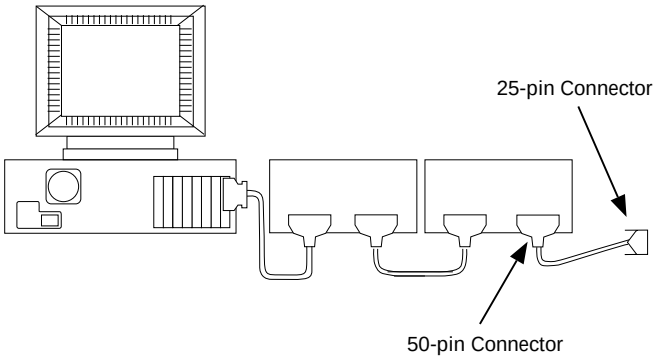
A. If there is an external SCSI terminator on an otherwise empty SCSI port on the last device, remove it.

B. If there is an external SCSI terminator between the end of a cable and a SCSI port on a device, remove the terminator. Reconnect the cable. (Later, if you remove the DCS 465 Camera Back cable from your PC, remember to replace this terminator.)

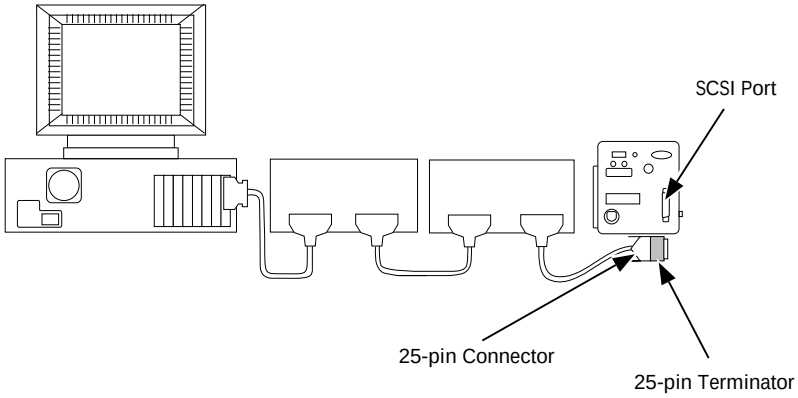
5. Select the SCSI cable with the 50-pin connector at one end and the 25-pin connector at the other end.

   IMPORTANT: Use only the cable supplied with the DCS 465 Camera Back; do not use a substitute cable.

6. Connect the 50-pin connector to the empty connector on the last SCSI device in the chain. Make sure the connector is well seated by pressing it into place firmly, and then pinch the thin wire clamps over its base.



7. Attach the supplied 25-pin terminator to the other end of the SCSI cable and then to the DCS 465 Camera Back.



8. (Optional) Later, to disconnect the camera back from the PC, turn off the computer and all external SCSI devices. Then restore the SCSI cables and terminator to the state they were in before the camera back was connected. Do not leave a SCSI cable with an empty connector dangling from a SCSI chain.

Skip the next section and continue at “KODAK Drivers for TWAIN-Compliant PC Applications” later in this chapter.

B. Follow these steps if the last connected device is terminated internally.

1. Turn off the PC, and all connected SCSI devices.

   IMPORTANT: Later when you connect and disconnect the PC and the DCS 465 Camera Back on a regular basis, make sure that all devices are off.

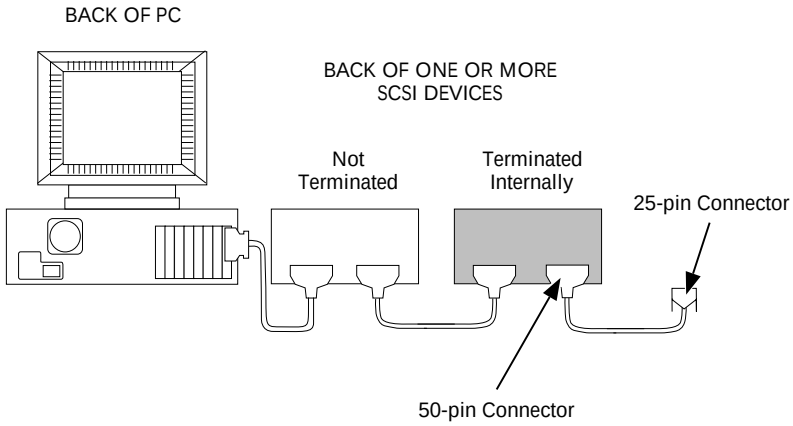
2. Place the DCS 465 Camera Back in a convenient position next to the last device in the SCSI chain of devices connected to your PC.

3. Connect the AC battery charger/adapter to the camera back as described in "Charging Batteries and Using the AC Battery Charger/ Adapter" earlier in this chapter. Although this step is optional, we recommend it whenever the camera back is connected to a computer.

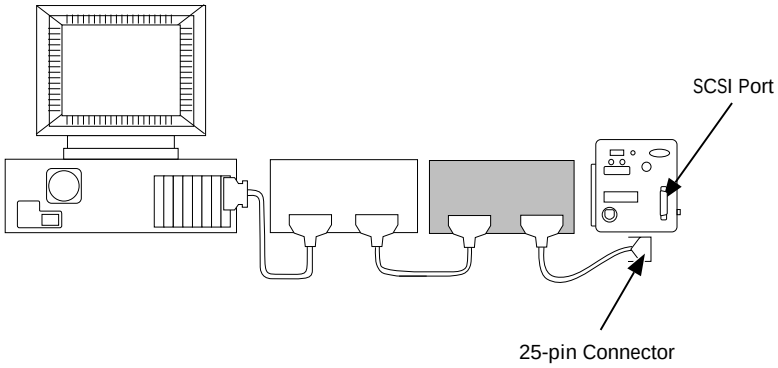
4. Select the SCSI cable with the 50-pin connector at one end and the 25-pin connector at the other end.

   IMPORTANT: Use only the cable supplied with the DCS 465 Camera Back; do not use a substitute cable.

5. Connect the 50-pin connector to the empty SCSI connector of the device that is terminated internally. Make sure the connector is well seated by pressing it into place firmly, and then pinch the thin wire clamps over its base.



6. Attach the other end of the SCSI cable to the SCSI connector on the DCS 465 Camera Back.



7. (Optional) Later, to disconnect the camera back from the PC, turn off the computer and all external SCSI devices. Then restore the SCSI cables and terminator to the state they were in before the camera back was connected. Do not leave a SCSI cable with an empty connector dangling from a SCSI chain.

Continue at "KODAK Drivers for TWAIN-Compliant PC Applications."

DCS 465 Camera Back Used with a Laptop

The DCS 465 Camera Back can be used with a laptop computer if you use a PCMCIA-to-SCSI II adapter (such as the New Media bus Toaster). These adapters include a PCMCIA card that plugs into the PCMCIA slot in your laptop (not in the camera back). A cable connects this card to the SCSI connector on the camera back, using an adapter if needed at the camera back end of the cable. None of this equipment is provided with the camera back.

In this configuration set the SCSI ID on the camera back to "PC;" this sets the camera back SCSI ID to 1 and turns on active termination in the camera back. (Later, install and use the Kodak TWAIN ASPI driver.)

CAUTION: When you finish with the camera back in "PC" mode, take the camera back out of "PC" mode and turn off the computer. If left in "PC" mode, a fully charged battery will be exhausted in approximately eight hours since the camera back can not change to low power mode when this SCSI setting is active.

KODAK Drivers for TWAIN-Compliant PC Applications

Introduction

This section documents how to install the KODAK Drivers for TWAIN-compliant PC applications as well as a calibration file for your camera back.

TWAIN is a set of written specifications developed by a consortium of vendors, that when implemented in software allows you to acquire data from a peripheral (such as a digital camera or film scanner) directly into your software application (such as image-editing software) without leaving the application. Software that incorporates the specifications is called "TWAIN-compliant." TWAIN-compliant software applications should be able to obtain image data from a TWAIN-compliant source of data, such as the KODAK Drivers described in this appendix.

The availability of KODAK Drivers for TWAIN-compliant PC applications means that you may be able to use the DCS 465 Camera Back with the growing number of software applications that support the TWAIN specifications.

Available KODAK Drivers for the DCS 465 Camera Back

When you use the DCS 465 Camera Back, you have two KODAK driver choices for use with PCs. Both provide identical functionality through a nearly-identical interface to the DCS 465 Camera Back. A description of each of these KODAK drivers follows.

- You can install and use the TWAIN-compliant driver for use with ASPI (Advanced SCSI Programming Interface) host adapter card such as those available from Adaptec, Inc. running EZ-SCSI 3.0 or later.

  IMPORTANT: This KODAK Driver is intended for use with applications that are ASPI compliant for Windows, and not for use with applications that are ASPI compliant for other operating platforms.

- You can install and use the TWAIN-compliant driver for use with the Future Domain SCSI host adapter cards listed in chapter 1.

As described in the next section, you should install only the driver that matches the host adapter card you have installed; if both adapters are installed you can install both drivers.

Installing TWAIN-compliant KODAK Driver(s) and the Calibration File

NOTES: We assume that a technician has installed a supported SCSI host adapter card in your PC. If that has not occurred, obtain and install an appropriate SCSI host adapter card — an ASPI compliant host adapter card such as those available from Adaptec, Inc. running EZ-SCSI 3.0 (or later) or a Future Domain SCSI host adapter as specified in chapter 1.

If you will be using an ASPI compliant SCSI host adapter card, you must install the Windows ASPI files that accompany it. The KODAK Driver for use with ASPI compliant host adapter cards will not work properly unless these files have been installed.

In this section you will install the special software driver(s) provided with the camera back for use with TWAIN-compliant PC applications as well as a calibration file for your camera back. Then in later sections of this chapter you can use the driver to ensure that the camera back has the latest firmware (camera back control programming), and to format a PCMCIA card(s). Once the software is installed, you can also use it regularly to move images and sound files from the DCS 465 Camera Back to your PC, as described in chapter 8.

Installing the software is a onetime action; you complete these steps once, and do not repeat them each time you want to acquire images. The DCS 465 Camera Back can remain connected to the AC battery charger/ adapter while you complete these steps.

The process described in this section automatically:

- Creates (if one does not already exist), a subdirectory named "TWAIN" in the Windows directory.
- Creates (if one does not already exist), a "DCS4XX" subdirectory within the "TWAIN" directory.

- Places a set of files within the "DCS4XX" subdirectory.
- Overwrites any existing DCS drivers already in the directory. This driver processes images from other KODAK DCS cameras (except for the DCS 100 or 200.)

Installing TWAIN Driver(s)

Follow these steps to install the KODAK Driver(s) for TWAIN-compliant PC applications for use with the DCS 465 Camera Back.

1. Start Microsoft Windows and make sure that you are in the Program Manager.
2. Insert the diskette labeled "KODAK Drivers for TWAIN-compliant Software for use with DCS 465" into your floppy drive.
3. Open the README file for the installation process by following these steps:
   A. Choose RUN from the FILE menu.
   B. Type A:\README.TXT (type B:\README.TXT if the diskette is in drive B) in the command line.
   C. Click OK; the file opens.
   D. After reading the file, choose EXIT from the FILE menu; you are returned to the Program Manager.
4. Continue the installation process by following these steps:
   A. Choose RUN from the FILE menu.
   B. Type A:\SETUP (type B:\SETUP if the diskette is in drive B) in the command line.
   C. Click OK.

D. Wait as the initial screen and then the welcome screen appear.

E. Read the welcome screen and then click CONTINUE.

5. When you see the DCS 465 TWAIN DRIVER INSTALL screen, follow these steps.

   A. Choose the driver option that matches the SCSI host adapter installed in your computer. Indicate which driver(s) you want to install by clicking "on" (an X appears to the left of the choice when it is on) either the DCS ASPI DRIVER FOR TWAIN, or the DCS FUTURE DOMAIN DRIVER FOR TWAIN. Laptop users should choose the ASPI driver.

      IMPORTANT: Do not select both choices unless both types of SCSI host adapters are installed in your PC.

      The ASPI driver is intended for use with applications that are ASPI compliant for Windows, and not for use with applications that are ASPI compliant for other operating platforms.

   B. Click INSTALL; wait as a box indicates progress in completing the installation.

   C. When you see the DCS TWAIN INSTALLATION COMPLETE screen, click VIEW README.

      IMPORTANT: There are two README files. The one you read at step 3 above applied to the installation process. This README file applies to using the TWAIN drivers.

   D. After reading the file, choose EXIT from the FILE menu; you are returned to the Program Manager.

6. Eject the driver disk and store it for possible future use.

The KODAK Driver is installed; now you must install the calibration file for your camera back.

Installing The Calibration (CAL) File

Follow these steps to install the calibration file for use with the DCS 465 Camera Back.

1. Start Microsoft Windows and make sure that you are in the Program Manager.
2. Insert the diskette labeled "KODAK Professional DCS 465 Digital Camera Back System Calibration File TWAIN (PC) Format" into your floppy drive.

   IMPORTANT: Make a backup of this diskette; you cannot move images into your TWAIN application without the CAL file.
3. Open the README file for the installation process by following these steps:
   A. Choose RUN from the FILE menu.
   B. Type A:\README.TXT (type B:\README.TXT if the diskette is in drive B) in the command line.
   C. Click OK; the file opens.
   D. After reading the file, choose EXIT from the FILE menu; you are returned to the Program Manager.
4. Continue the installation process by following these steps:
   A. Choose RUN from the FILE menu.
   B. Type A:\SETUP (type B:\SETUP if the diskette is in drive B) in the command line.
   C. Click OK.
   D. Wait as the initial screen and then the welcome screen appear.
   E. Read the welcome screen and then click CONTINUE.

. . . . . .

5. You see the DCS46x CALIBRATION FILE INSTALLER screen; follow these steps.

   A. Click INSTALL; wait as a box indicates progress in completing the installation.

   C. Read the DCS46x CALIBRATION FILE INSTALLATION COMPLETE screen, then click RETURN TO WINDOWS.

The calibration file is now installed.

Inserting (and Removing) a PCMCIA Card into the DCS 465 Camera Back

This section describes how to insert (and remove) a PCMCIA card into the camera back. PCMCIA cards are not supplied with the camera back, but are available as optional equipment. Refer to chapter 1, to the READ ME file on the supplied software driver diskettes, and to the appendix "Optional Equipment & Spare Parts List" for additional information on supported cards.

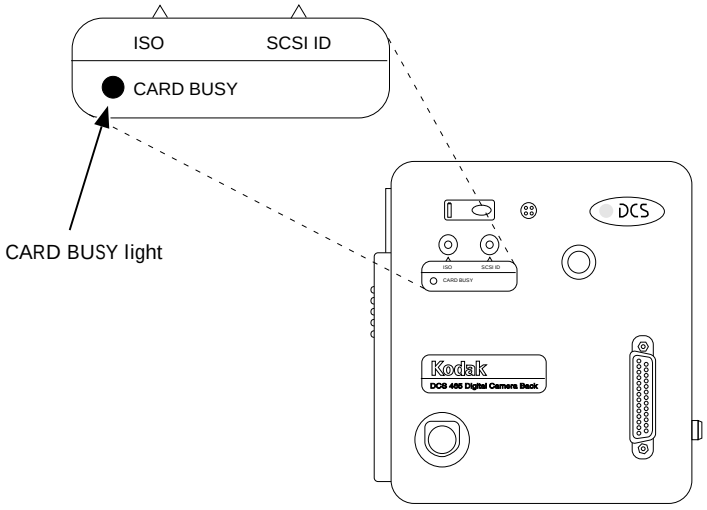
A PCMCIA card can be inserted or removed at any time, except when the red "Card Busy" light on the camera back is blinking. You can insert/remove a card while in the field, while connected to the AC battery charger adapter, while connected to a computer and/or while the camera back is on or off.

IMPORTANT: When the red Card Busy light is blinking, data is being read from or written to the PCMCIA card, for example just after you take a picture, or later when you move data from the camera back to a computer. If the card is removed while the light is blinking, you may lose the current image, and may lose other images as well.

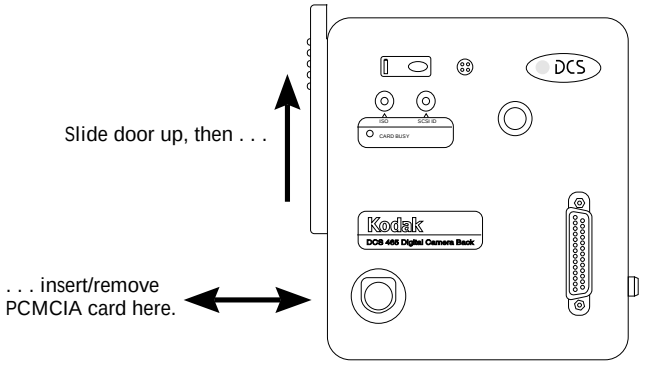
Inserting a PCMCIA Card

Follow these steps to insert a PCMCIA card. (If a card is currently installed, there is no need to follow these steps now, although if you are unfamiliar with the use of this type of card you may wish first to remove the card as described in the next section, and then to return here to reinstall the card.)

1. Be certain that the red “Card Busy” light is not blinking before you continue.

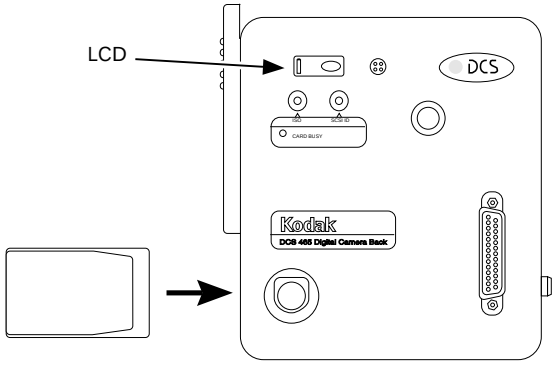


2. While looking at the camera back, open the door on the left edge of the camera back by sliding the door up.

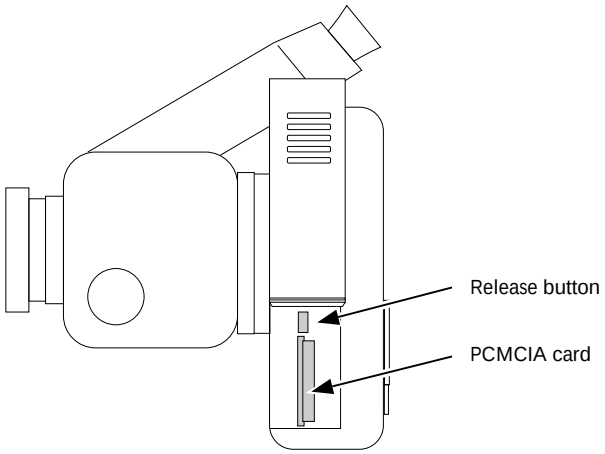


3. **NOTE**: As you complete this step, do not be startled when the red Card Busy light blinks and you hear noise from the camera back; this is normal operation when a PCMCIA card is inserted.

Slide your PCMCIA card (not supplied with the camera back) — thin edge first — into the empty slot, and push it firmly into place.



When properly installed, the end of the PCMCIA release button should be flush with the edge of the card.



4. Slide the door down over the PCMCIA card compartment.

   NOTE: The camera back LCD (see the first figure in the previous step) may show "E6," a code indicating that the PCMCIA card is not formatted. That is a normal condition at this point in the preparation of the camera back. In a later section of this chapter you will format the PCMCIA card.

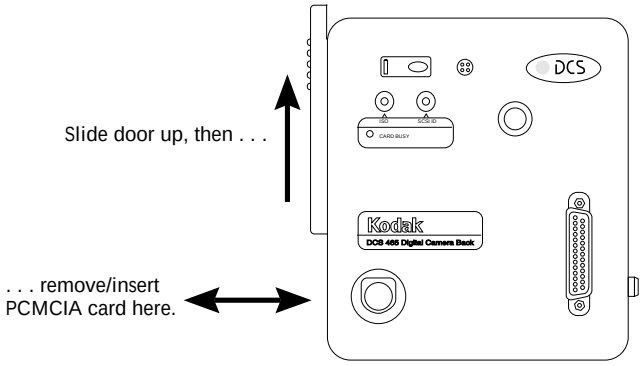
Removing a PCMCIA Card

Follow these steps to remove a PCMCIA card.

1. Be certain that the red "Card Busy" light is not blinking before you continue.

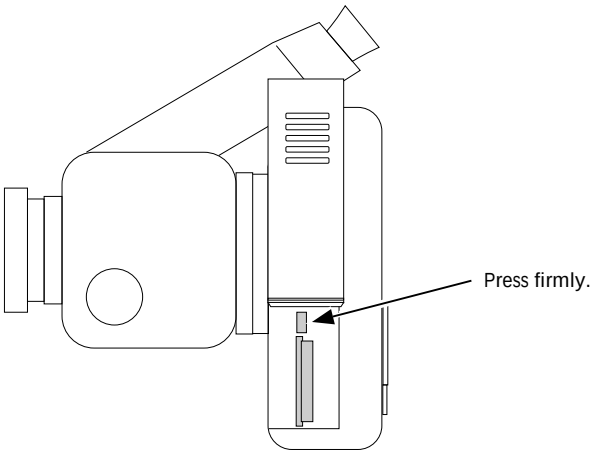
   IMPORTANT: When the red Card Busy light is blinking, data is being read from or written to the PCMCIA card, for example just after you take a picture, or later when you move data from the camera back to a computer. If the card is removed while the light is blinking, you may lose the current image, and may lose other images as well.

2. While looking at the camera back, open the door on the left edge of the camera back by sliding the door up.



3. **CAUTION**: As you complete this step, the PCMCIA card is ejected from the camera back; for that reason, keep your hand in front of the door opening to prevent the fragile card from falling out of the camera back. If a PCMCIA card is dropped, you may destroy it (resulting in the loss of all of your data on the card).

   Firmly press the rectangular button at the top of the opening inside the door; this action releases the PCMCIA card from its connector and ejects the card from the camera back.



4. Remove the card from the camera back by grasping it at the top and bottom with your thumb and forefinger and pulling it completely from the camera back.
5. Slide the door down over the empty card compartment.

Accessing a KODAK Driver for TWAIN-compliant PC Applications

Repeat the steps below each time you want to access the KODAK Driver for TWAIN-Compliant PC Applications.

1. If the DCS 465 Camera Back and your PC are not connected, turn off the computer and connect them now by following the directions in "Making the SCSI Connection" earlier in this chapter.
2. Connect the AC battery charger/adapter to the camera back as described earlier in this chapter. Although this step is optional, we recommend it whenever the camera back is connected to a computer.
3. If you are not using the adapter, wake-up the camera back by lightly pressing the record button.
4. Turn on the PC.
5. If it has not been configured to start automatically, start Microsoft Windows.

Accessing the Driver in Selected Software Applications

All TWAIN-compliant software does not provide access to TWAIN drivers in the same way. As a result, for demonstration purposes this section provides examples using the KODAK Drivers with:

Adobe Photoshop 2.5 and 3.0 for Windows
Aldus PhotoStyler 2.0
Aldus PhotoStyler 1.1A
Micrografx Picture Publisher 4.0 and 5.0
Media Cybernetics HALO Desktop Imager 2.01.H

Read the example for the software you use. If your software is not included, refer to its documentation to determine if it is TWAIN-compliant, and if it is, how it provides access to TWAIN drivers.

NOTE: As you use a variety of TWAIN-compliant software, it may be helpful to know how the TWAIN specifications expect applications to perform. The specifications provide for a consistent software interface by encouraging software developers to include two specific commands — SELECT SOURCE and ACQUIRE — on the FILE menu. The specification intends that users should first choose SELECT SOURCE which should display a list of TWAIN-compliant device drivers installed on the computer system. After the user selects a driver from the list, he/she should be returned to the application. The user should then choose ACQUIRE which should open access to the device and allow the user to obtain image data.

IMPORTANT: Some image editing software takes all available RAM by default at start-up. The TWAIN driver will not work if this occurs. To avoid the problem set the memory preference for your application (often found on the FILE menu) so that there is at least one megabyte of free RAM.

Example 1: Adobe Photoshop 2.5 and 3.0 for Windows

Once you have installed the TWAIN driver(s) as described earlier in this chapter, and are in Windows, you access the driver by following these steps.

NOTE: Refer to the "Important" note just above.

1. Run Adobe Photoshop for Windows.
2. Choose SELECT TWAIN SOURCE on the ACQUIRE submenu on the Adobe Photoshop FILE menu; the SELECT SOURCE dialog box appears.
3. Click "DCSXXX,FUTUREDOMAIN" or "DCSxxx,ASPI" depending on which version of the TWAIN driver you installed and want to use. Laptop users should click the ASPI driver.

4. Click SELECT; you are returned to Photoshop.

   NOTE: The choice of source, and other settings you establish while using the driver, are maintained in a preferences file for the TWAIN-compliant driver; you do not need to repeat steps 2 through 4 each time you use the driver.

5. Choose TWAIN (TWAIN ACQUIRE in Photoshop 3.0) on the ACQUIRE submenu on the FILE menu.

6. Wait as the driver image window appears, then continue at "Updating Firmware in the DCS 465 Camera Back." That section begins by showing the driver image window.

Example 2: Aldus PhotoStyler 2.0

NOTE: PhotoStyler has been discontinued recently by Adobe. Consult your preferred image editing software producer for potential upgrade information. For example, Adobe currently offers an upgrade path from PhotoStyler to Photoshop.

Once you have installed the TWAIN driver(s) as described earlier in this chapter, and are in Windows, you access the driver by following these steps.

1. Run Aldus PhotoStyler 2.0.

2. Choose SELECT SCANNER on the SCAN submenu on the Aldus Photo-Styler 2.0 FILE menu; the SCANNER SETUP dialog box appears.

3. Click "DCSXXX,FUTUREDOMAIN" or "DCSxxx,ASPI" depending on which version of the TWAIN driver you installed and want to use. Laptop users should click the ASPI driver.

4. Click OK; you are returned to PhotoStyler 2.0.

   NOTE: The choice of source, and other settings you establish while using the driver, are maintained in a preferences file for the TWAIN-compliant driver; you do not need to repeat steps 2 through 4 each time you use the driver.

5. Choose ACQUIRE on the SCAN submenu of the FILE menu.

6. Wait as the driver image window appears, then continue at "Updating Firmware in the DCS 465 Camera Back." That section begins by showing the driver image window.

Example 3: Aldus PhotoStyler 1.1A

NOTE: PhotoStyler has been discontinued recently by Adobe. Consult your preferred image editing software producer for potential upgrade information. For example, Adobe currently offers an upgrade path from PhotoStyler to Photoshop.

IMPORTANT: TWAIN compatibility was not provided initially with Aldus PhotoStyler 1.1A, and must be added by obtaining from Aldus, and then installing, the PhotoStyler Accessory Pack 1.1A for WINDOWS.

Once you have installed the TWAIN driver(s) as described earlier in this chapter, and are in Windows, you access the driver by following these steps.

1. Run Aldus PhotoStyler 1.1A.
2. Choose SELECT on the IMPORT submenu on the PhotoStyler 1.1A FILE menu; the SELECT SOURCE dialog box appears.
3. Click "DCSXXX,FUTUREDOMAIN" or "DCSxxx,ASPI" depending on which version of the TWAIN driver you installed and want to use. Laptop users should click the ASPI driver.
4. Click SELECT; you are returned to PhotoStyler 1.1A.

   NOTE: The choice of source, and other settings you establish while using the driver, are maintained in a preferences file for the TWAIN-compliant driver; you do not need to repeat steps 2 through 4 each time you use the driver.
5. Choose ACQUIRE on the IMPORT submenu on the FILE menu.
6. Wait as the driver image window appears, then continue at "Updating Firmware in the DCS 465 Camera Back." That section begins by showing the driver image window.

Example 4: Micrografx Picture Publisher 4.0 and 5.0

Once you have installed the TWAIN driver(s) as described earlier in this chapter, and are in Windows, you access the driver by following these steps.

1. Run Micrografx Picture Publisher.
2. Choose SCANNER on the SETUP submenu on the Micrografx Picture Publisher FILE menu; the SETUP SCANNER dialog box appears.
3. Click TWAIN (version 4.0) or SELECT SOURCE (version 5.0); you see the SELECT SOURCE dialog box.
4. Click "DCSXXX,FUTUREDOMAIN" or "DCSxxx,ASPI" depending on which version of the TWAIN driver you installed and want to use. Laptop users should click the ASPI driver.
5. Click SELECT; you are returned to the SETUP SCANNER dialog box.
6. Click OK; you are returned to Picture Publisher.

   NOTE: The choice of source, and other settings you establish while using the driver, are maintained in a preferences file for the TWAIN-compliant driver; you do not need to repeat steps 2 through 6 each time you use the driver.
7. Choose ACQUIRE on the FILE menu.
8. Wait as the driver image window appears, then continue at "Updating Firmware in the DCS 465 Camera Back." That section begins by showing the driver image window.

Example 5: Media Cybernetics HALO Desktop Imager 2.01.H

Once you have installed the TWAIN driver(s) as described earlier in this chapter, and are in Windows, you access the driver by following these steps.

1. Run Media Cybernetics HALO Desktop Imager 2.01.H.
2. Choose SCAN on the Media Cybernetics HALO Desktop Imager 2.01.H FILE menu; the SCAN dialog box appears.
3. Click TWAIN SCANNERS.
4. Click SELECT; you see the SELECT SOURCE dialog box.
5. Click "DCSXXX,FUTUREDOMAIN" or "DCSxxx,ASPI" depending on which version of the TWAIN driver you installed and want to use. Laptop users should click the ASPI driver.
6. Click SELECT; you are returned to the SCAN dialog box.

   NOTE: The choice of source, and other settings you establish while using the driver, are maintained in a preferences file for the TWAIN-compliant driver; you do not need to repeat steps 2 through 6 each time you use the driver.
7. Click ACQUIRE.
8. Wait as the driver image window appears, then continue at "Updating Firmware in the DCS 465 Camera Back," on the next page. That section shows the driver image window.

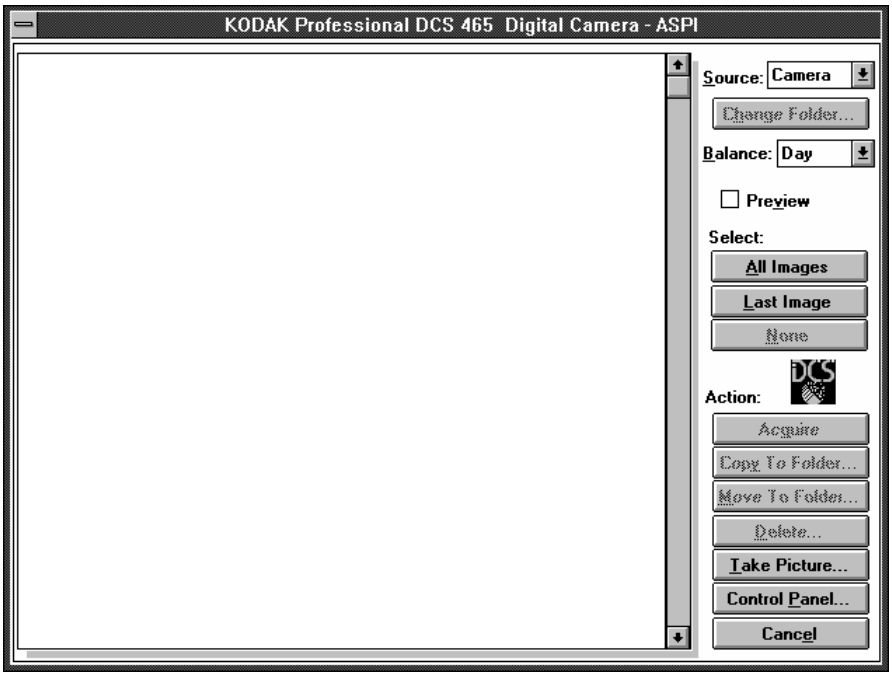
Updating Firmware in the DCS 465 Camera Back

The DCS 465 Camera Back incorporates nonvolatile memory that contains controls — called firmware — for most features of the camera back. You can update that firmware yourself, which means you can keep the camera back up-to-date as changes are made to the firmware. (Refer to the appendix "Updating Your Kodak Software Driver," for additional information.) You can also perform some troubleshooting without sending the camera back to a service center, as described in the camera back troubleshooting section of this manual.

By following the steps below to update camera back firmware the first time you use the TWAIN driver, you will ensure that the camera back contains the most current version of the firmware. You do not need to update camera back firmware each time you use the driver.

NOTE: To complete these steps, the camera back must be connected to your PC as described earlier in this chapter. We also assume that one of the software applications described earlier in this chapter is currently running on your PC, and that you have accessed the driver image window, which is shown on the next page.

You should now be viewing the driver image window below.

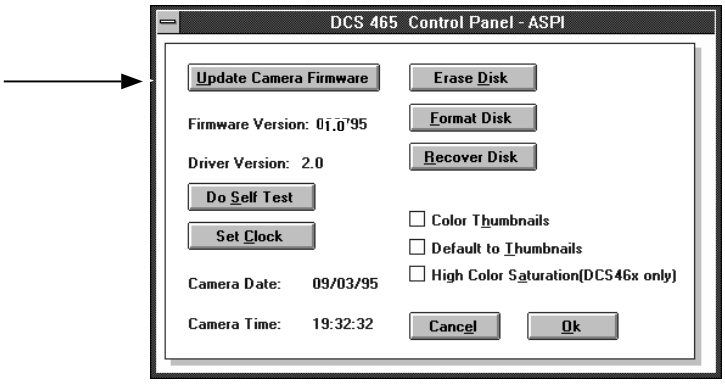


NOTE: Instead of the driver image window you may see a message indicating that the camera back was not found. If you do, follow the troubleshooting suggestions in the message. Additional information about this and other messages appears in the "Messages" section of chapter 11.

If for some reason you are unable to access the driver image window, you can still reach the Control Panel (needed in the next steps), by holding down the Control key on your keyboard; this will bypass the driver image window and place you into the Control Panel directly.

Follow these steps to update camera back firmware.

1. Click the CONTROL PANEL button of the driver image window. You will see the dialog box below.



2. Click the UPDATE CAMERA FIRMWARE button.
3. Wait while firmware is copied to the camera back.

   NOTE: You may see a message asking you to use the AC battery charger/ adapter and to wait for several minutes; if you do see this message, follow the instructions in the message and wait (to allow the battery to charge) before clicking the UPDATE CAMERA FIRMWARE button again.
4. Click OK to close the Control Panel and return to the driver image window.

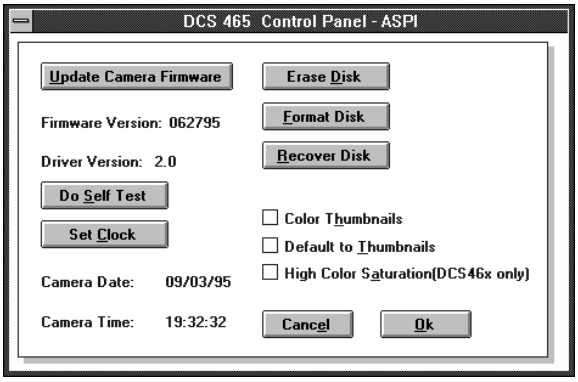
Formatting a PCMCIA Card

This section describes how to format a PCMCIA card, an action you should take now as you start to use the camera back, and may need to repeat later on an occasional basis when you want to format another card, or to reformat a card you have been using with the DCS 465 Camera Back.

NOTE: To complete these steps, the camera back must be connected to your PC as described earlier in this chapter. We also assume that one of the software applications described earlier in this chapter is currently running on your PC, and that you have accessed the driver image window.

A PCMCIA card used for image storage must be (DOS) formatted with the DCS 465 Camera Back using the supplied driver as described in this section.

1. Click the CONTROL PANEL button of the driver image window. You will see the dialog box below.



2. **IMPORTANT:** As you complete this step, keep in mind that this operation will erase all existing data on the PCMCIA card.

   If you have an unformatted PCMCIA card in the camera back, click the FORMAT DISK button, and click the response you want on the confirmation box that appears.

3. Wait as the software formats the card.
4. If you have more than one card to format, you can remove the current card as described earlier in this chapter, insert another, and click the FORMAT DISK button again to format the new card. You can also use this operation to reformat a card that you have been using with the camera back.
5. Click OK to close the Control Panel.
6. Click CANCEL to leave the driver image window.
7. Quit your application.

Quitting — Disconnecting the Camera Back from the Computer

Complete these steps when you have completed your work with the DCS 465 Camera Back and the PC.

1. If your application is running, quit it now.
2. Turn off your PC.
3. Turn off other SCSI devices if present.
4. (Optional) Disconnect the AC battery charger/adapter if it is connected.
5. (Optional) Disconnect the DCS 465 Camera Back from the computer.

   CAUTION: Do not disconnect the camera back from the computer while the driver image window is open, or even while the computer is on. Doing so may result in the loss of data from the PCMCIA card in the camera back or from the hard disk in your computer. Instead, turn off all equipment as described above before disconnecting the camera back.

Continue in chapter 6 for a description of how to take pictures with the camera back and your camera.

6

Using the DCS 465 Camera Back

Follow the steps in this chapter to take pictures with the KODAK Professional DCS 465 Digital Camera Back (DCS 465 Camera Back) and your camera in a variety of settings, including:

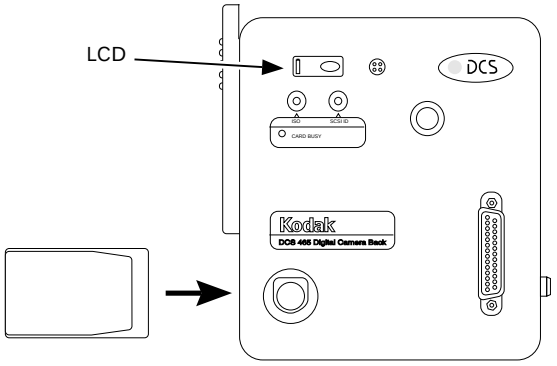
- Indoors while connected to the AC battery charger/adapter. (We recommend that you keep the adapter connected to the camera back when working indoors.)
- Indoors connected to a computer (with or without the adapter).
- In the field operating from the camera back battery without a computer or adapter.

NOTE: This chapter describes how to use the DCS 465 Camera Back with a PCMCIA card. You can also use the camera back without a PCMCIA card while connected to a computer as described in chapter 9.

Readying the DCS 465 Camera Back

1. If the DCS 465 Camera Back is not connected to your camera, connect it now as described in chapters 4 (Macintosh) or 5 (PC).
2. If a formatted PCMCIA card is not in the camera back, insert one now.

   NOTE: Refer to chapters 4 (Macintosh) or 5 (PC) for information on formatting, inserting, and removing PCMCIA cards. If the camera back LCD shows “E6” the card has not been formatted; you must format it before you can continue.



3. Select either step A or B below depending on the environment in which you will use the camera back.

   A. *Indoors.* Connect the camera back to the AC battery charger/adapter as described in chapters 4 (Macintosh) or 5 (PC); leave it connected while you operate your camera. The camera back will be ready for operation almost immediately. However, if you are beginning with a dead battery (you notice unusual random characters on the camera back LCD), follow special charging instructions in chapters 4 (Macintosh) or 5 (PC).

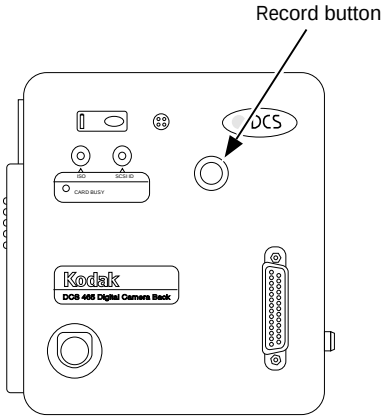
      NOTE: The AC adapter supplies enough power to support operation of the camera back as well as to continue charging the camera back battery. Once the battery is fully charged, the AC adapter automatically switches to a slow trickle charge.

   B. *In the field without the AC battery charger/adapter.* Before you go into the field, you should charge the battery fully as described in chapters 4 (Macintosh) or 5 (PC). Charging the battery for one hour will ensure the most images per charge.

4. Wake the camera back if needed by following the instructions in this step.

   If the camera back is connected to the AC battery charger/adapter and/or to your computer which is on, the camera back is awake. However, if it is not connected to either device, you must wake it. Wake it by following either step A or B below depending on the type of camera you have.

A. Mechanically tripped camera. Press the record button on the camera back. (The camera back sleeps again in five seconds; reawaken it, if needed, by pressing the record button again.)

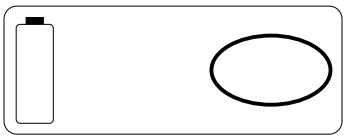


B. Electrically tripped camera. Press the record button on the camera back or briefly press the button at the end of the shutter release cable. (The camera back sleeps again in five seconds; reawaken it, if needed, by lightly pressing the shutter release cable button again.)

NOTE: If the button at the end of the shutter release cable is held for too long (more than 1⁄4 of a second) you will take a picture; therefore, just briefly tap the button to wake the camera back.

The camera back is asleep when its LCD displays only the graphics illustrated below. If other data appear on the LCD, the camera back is awake.

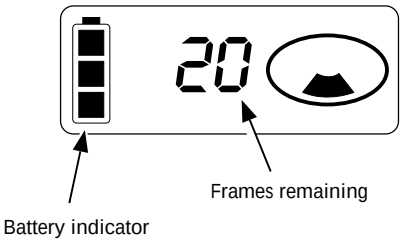
LCD CAMERA-ASLEEP GRAPHICS



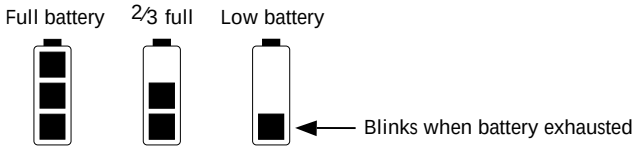
When not connected to a computer or the AC adapter, the camera back automatically turns off after approximately five seconds to save the battery.

5. Notice that the camera back LCD displays several graphics. (If the camera back is not awake, wake it as described in the previous step to see these data on the LCD.) The graphics display:
   - The amount of charge in the battery as described in the next step.
   - The number of frames remaining on the PCMCIA card. For example the illustration below indicates that there is still room for 20 additional images on the card.
   - An oval that serves several purposes, including indicating the amount of the PCMCIA card filled with images. (An empty oval indicates that the PCMCIA card is empty.)

LCD CAMERA-AWAKE GRAPHICS



6. With the camera back awake, check the battery indicator on the LCD.
   - If the segments are lighting in turn from bottom to top, the battery is being charged by the attached AC battery charger/adapter; you can operate the camera back normally in this state.
   - Without the AC battery charger/adapter, if the indicator shows that the battery is low, recharge it or operate the camera back from the AC battery charger/adapter.



Setting the ISO

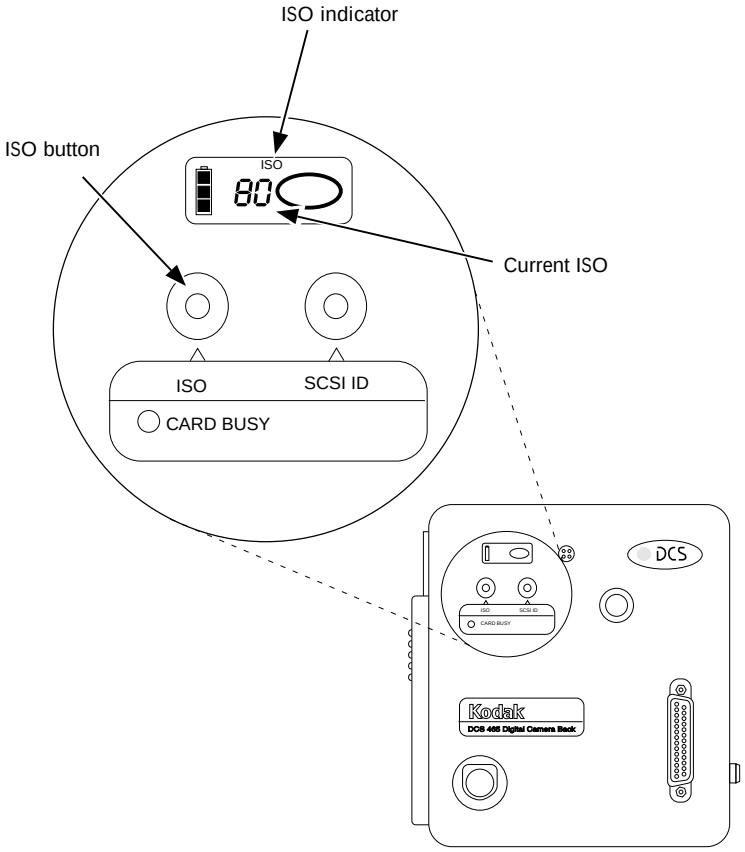
This section describes how to set the ISO on the camera back.

NOTE: If a single ISO setting is available, there is no change in the displayed setting when you press this button. If more than one ISO setting should become available for your camera back, the ISO indicator cycles to the next supported ISO.

1. If necessary wake the camera back as described earlier in this chapter.

   NOTE: After five seconds of inactivity, the camera back automatically turns off. As you complete these steps you may need to reawaken the camera back.

2. Locate the indented button on the back of the DCS 465 Camera Back labeled “ISO.”



3. Press the ISO button once with your fingertip or other blunt object; this action wakes ISO mode. The characters “ISO” appear on the camera back LCD as does the current ISO.
4. While “ISO” still appears on the LCD, press the ISO button again. The ISO indicator cycles to the next supported ISO. A color camera back supports an ISO setting of 80 and a monochrome camera back supports a setting of 160.
5. (Optional) Press the ISO button again — repeatedly if you wish — until the desired supported ISO is selected.
6. Set the ISO on your camera to match the ISO on the camera back.

Taking Pictures

1. If it is not awake, wake the camera back as described earlier in this chapter.
2. Frame the scene as you would if you were using film.
3. Focus.
4. Release the shutter as described in either part A or B below. The camera back supports a two-image burst.

   A. Mechanically tripped camera. Wake the camera back if necessary, wind the film winder, and press the cable release button. A picture will be recorded.

      NOTES: Your cable release (not supplied) must have a “throw” of at least 5⁄8-inch in order to extend far enough into the camera trigger module to trip the camera. The throw is the distance the pin extends from the end of the cable release when you fully depress the cable release button.

      The camera back cannot take exposures of more than three seconds.

      If the shutter release plunger is *partially* depressed for more than three seconds, the camera back will not capture an image.

B. Electrically tripped cameras. You do not need to wake the camera back. Instead, after winding the film winder (if necessary), press and hold the shutter release cable button for one-quarter second or more. A picture will be recorded.

NOTES: The camera back cannot take exposures of more than three seconds.

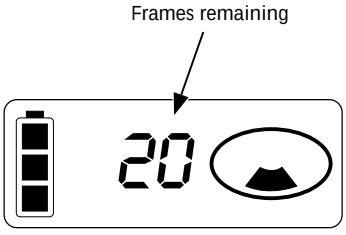
If the shutter release plunger is *partially* depressed for more than three seconds, the camera back will not capture an image.

Frames Remaining Indicator and Frame Counter

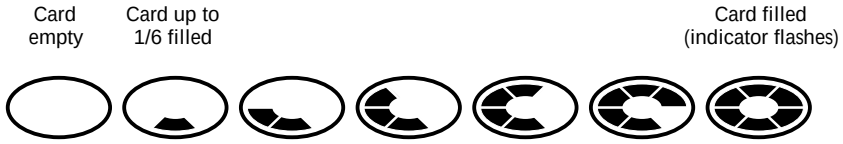
Two numbering systems provide different information about pictures you take.

Frames Remaining

Each time you take a picture, the number on the camera back LCD goes down by one indicating the number of additional pictures that can be stored on the PCMCIA card currently in the camera back. If the card is filled, you can replace it with another (as described in chapters 4, Macintosh; and 5, PC) and continue shooting.



The oval at the right of the LCD indicates the amount of the PCMCIA card filled with images. As more pictures are taken, subsequent sectors of this graphic appear.



Frame Counter

A separate numbering system is provided by the camera back. These numbers go up by one as each picture is taken. After reaching number 99, the image reference numbers cycle back to 1, 2, etc.

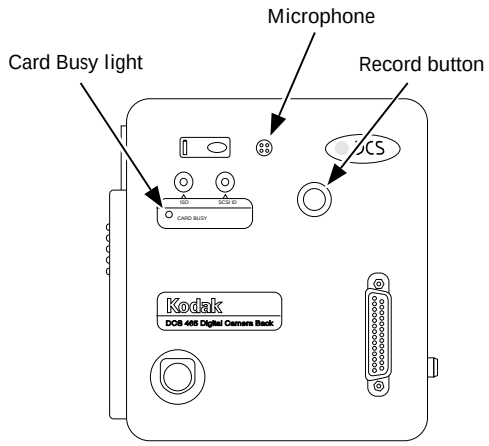
As explained in chapters 7 (Macintosh) or 8 (PC), this frame counter is displayed beneath each image in the software driver image window. (It is not displayed on the camera back.)

Recording Sound (Optional)

You can record sound on the PCMCIA card via a microphone built into the DCS 465 Camera Back. To do so, follow these steps.

1. Hold the camera back approximately six inches from your mouth.

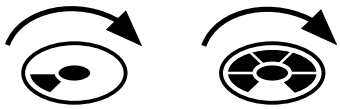
2. Press and hold the Record button. (If the camera back is not awake, pressing the Record button will wake it.)



3. Speak into the microphone.
4. Release the record button; the red Card Busy light blinks as the data are recorded to the PCMCIA card.

The center dot of the disk icon on the camera back LCD comes on when the Record button is pressed, and segments of the disk icon bounce up and back, serving as a level meter (similar to the levels commonly dis-

played on audio equipment like tape decks). The bouncing segments provide a visual indication that sound is being recorded. The best quality recording should occur when 4-5 segments are on.



No sound Maximum

The camera back cannot play the recorded sound; instead, you will need to use your computer as described in chapters 7 (Macintosh) and 8 (PC). Chapter 9 contains additional reference material about recorded sound files.

Awake/Sleep Modes

If you are connected to the AC battery charger/adapter, the camera back remains awake until you unplug the adapter. If you are connected to a computer, the camera back is awake whenever the computer is on. If you are connected to neither device the camera back enters sleep mode automatically after five seconds of inactivity. This preserves battery life.

Operating Differences with Your Camera

There are differences between normal operation of your camera and its operation when connected to the DCS 465 Camera Back, including:

- You use the DCS 465 Camera Back incorporating a Kodak imager instead of a film back.
- You use only supported ISO settings as described earlier in this chapter.
- The amount of “noise” (defects) in an image increases linearly with time; there is a slow progression of added noise as exposure time increases. Similarly, a higher ISO results in more noise than a lower ISO, again in a linear progression. As a result, you should work with shorter exposure times and lower ISO settings if possible, and avoid long exposures. Exposures over five seconds are not supported.
- The camera back incorporates a universal mount that allows for horizontal or vertical mounting of the camera back to your camera.
- The camera back cannot take exposures of more than three seconds.
- If the shutter release plunger is *partially* depressed for more than three seconds, the camera back will not capture an image.

7

Accessing DCS 465 Camera Back Images from a Macintosh Computer

This chapter is a tutorial that describes how to use the DCS 465 Camera Back while connected to your Macintosh computer, including how to:

- Access the Kodak Driver for Adobe Photoshop Software.
- View images with the Kodak Driver for Adobe Photoshop Software.
- Select the color balance for an image(s).
- Acquire images from the DCS 465 Camera Back into Adobe Photoshop Software.
- Play recorded sound files.
- Use other features of the Kodak Driver for Adobe Photoshop Software, including a listing of cautions when using the camera back.

The DCS 465 Camera Back is designed to be used in the field or while connected to your computer. While connected, you can use the camera back and the Macintosh computer in conjunction with each other, or you can use either independently of the other. While connected, you use the supplied software driver to:

- Acquire image files into Adobe Photoshop. This means that individual image files from your PCMCIA card are opened into separate windows in Adobe Photoshop. Once acquired you can use all Photoshop features to edit the image, and can use Photoshop to save the file in the variety of file formats available in Photoshop.
- Access and manage (for example delete) image and sound files on the PCMCIA card in your camera back.
- Move image and sound files directly from the PCMCIA card to your Macintosh computer hard disk.

NOTES: This chapter assumes that you have installed the Kodak Driver for Adobe Photoshop Software (Macintosh) and that you know how to connect the DCS 465 Camera Back to your Macintosh computer. Refer to chapter 4 for information if needed.

The settings you choose while in the driver image window are maintained automatically from session to session.

You should ensure that the gamma for your monitor is calibrated properly per instructions accompanying Adobe Photoshop; if it is not, images may be consistently too light or too dark.

Accessing the DCS 465 Camera Back from the Driver

Repeat the steps below each time you want to access the camera back from the Kodak Driver for Adobe Photoshop Software.

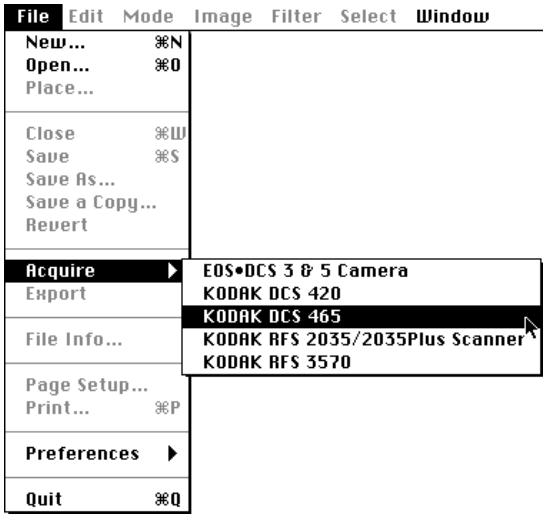
1. If the DCS 465 Camera Back and your Macintosh computer are not connected, turn the computer off and connect them now by following the directions in chapter 4.
2. Connect the AC battery charger/adapter to the camera back as described in chapter 4. Although this step is optional, we recommend it whenever the camera back is connected to a computer.
3. With the computer off, turn on the DCS 465 Camera Back by pressing the record button, or operate the camera back while connected to the AC battery charger/adapter which places the camera back in a continual awake state.
4. Turn on the Macintosh computer.
5. Wait until you are in the Finder.
6. If one is not present, insert a PCMCIA card into the camera back.

   NOTES: As you work with the camera back and the computer, you can insert and remove cards at any point in the process; however, do not remove a PCMCIA card while the red Card Busy light on the camera back is blinking. If you do, you may lose all data on the card.

   Use extreme care with PCMCIA cards, as they are easily damaged — especially if dropped. If dropped, you may destroy the PCMCIA card resulting in the loss of all of your data on the card.
7. Run Adobe Photoshop.

8. Pull down the Adobe Photoshop FILE menu and choose KODAK DCS 465 from the ACQUIRE submenu.

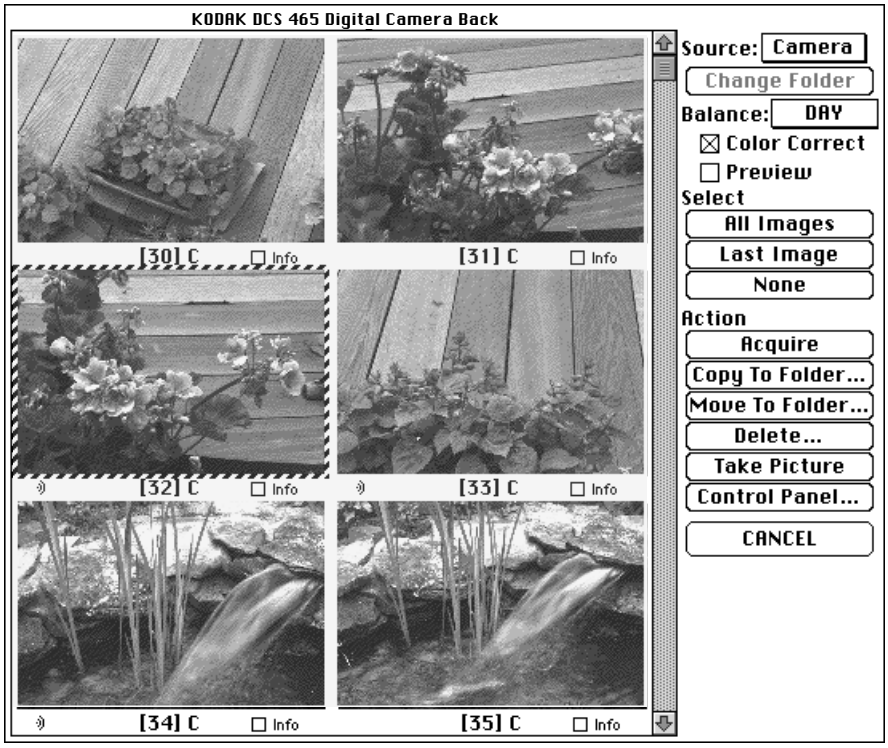
   NOTE: OPEN from the Adobe Photoshop FILE menu will not acquire images from the DCS 465 Camera Back.



9. Wait as the driver image window appears.

NOTES: If a single large image appears, click the PREVIEW choice “off” to replace that larger preview image with the smaller images.

The number of images on each row and in each column is a function of the size of your monitor.



NOTES: Instead of the driver image window above you may see a message indicating that the camera back was not found. If you do, follow the trouble-shooting suggestions in the message. Additional information regarding this and other messages appears in the "Messages" section of chapter 10.

Instead of one of the thumbnails, you may see the message "Calibration file (. . .) is missing." For an explanation refer to this message in the "Messages" section of chapter 10 or to "Calibration (CAL) Files" in chapter 9.

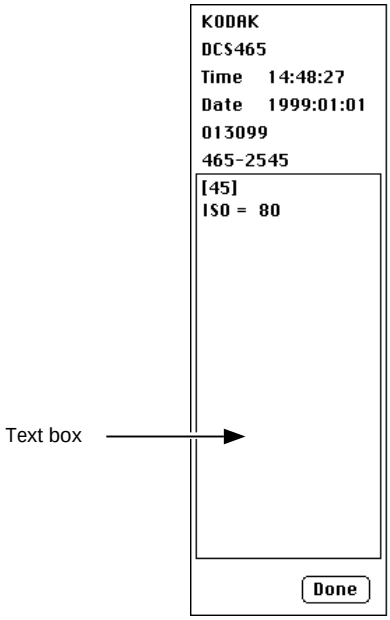
Viewing Images with the KODAK Driver for Adobe Photoshop Software

The driver image window displays thumbnails of images from the DCS 465 Camera Back PCMCIA card. A thumbnail is a subsample of data from the full image. Thumbnails appear in the driver image window in the same logical order that images appear on the DCS 465 Camera Back PCMCIA card. An image number appears beneath each image. A “C” after the image number — if it appears — indicates a color image. Depending on the size of your monitor, you will see two or more thumbnails on each row, and two or more rows of thumbnails.

You can scroll through the images by moving the vertical scroll box or scroll arrows on the window, or by pressing the Page Up, Page Down, Home, or End keys on the Macintosh computer keyboard.

1. Scroll, if needed, until the image you want to acquire (move into a Photoshop window) appears in the driver image window.

2. (Optional) Click once on the small square "INFO" box beneath the lower right corner of an image; an information box opens at the right of the driver image window.



. . . . . .

The information box displays data about the status of the camera back when the image was taken. Included are: time (displayed in 24-hour format) and date the image was made, firmware version number (a date), camera back serial number, the image number, and the ISO setting.

You can type descriptive material about the image into the text box. In total, 250 characters of information can appear in the box.

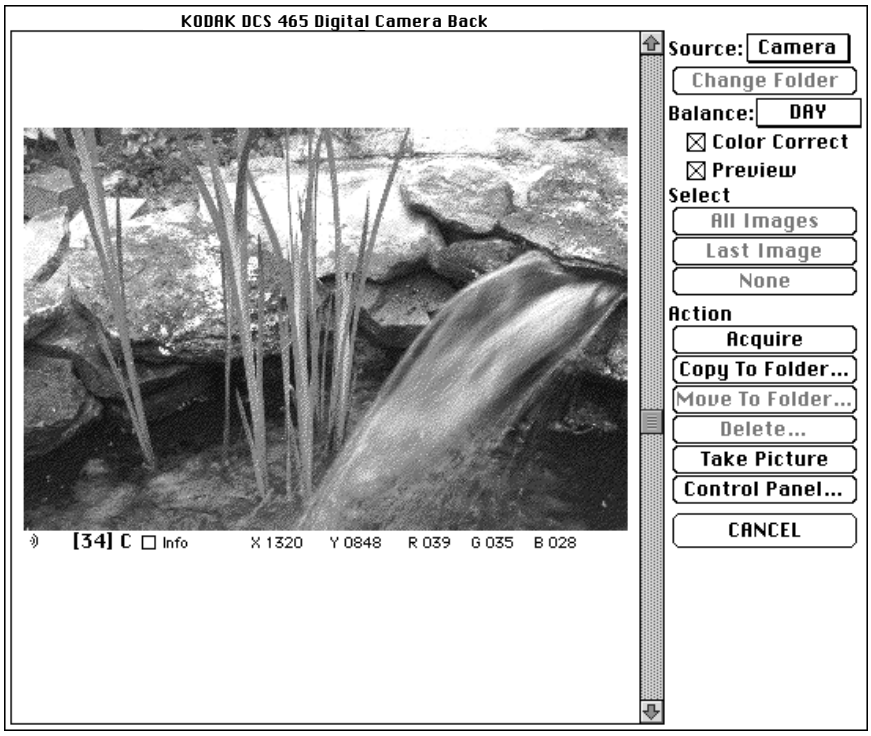
NOTES: If your computer monitor provides a software switch that allows you to center dialog boxes (for example SuperMac or E-Machines monitors), you may wish to turn this feature off so that an information box does not cover images on the screen.

The DCS 465 Camera Back battery maintains its time and date. You can use the driver to update them if they are incorrect. First make certain that your Macintosh computer system clock shows the correct time and date. Then update these data in the camera back by clicking the CONTROL PANEL button of the driver image window and then clicking the SET CLOCK button of the control panel.

3. If you have opened the information box, click its DONE button to close it.
4. Click once on the image you want. A narrow border appears around the image in the driver image window, as included on one image in the driver image window shown earlier in this chapter.

5. (Optional) Click on PREVIEW. You see a single, enlarged version of the image.

   The preview image appears in color (if it was taken with a color model of the camera back and if you have a color monitor). Data below the image indicate the image number, a “C” for a color image, the current X and Y pixel location of the crosshair cursor on the preview image, and the red (R), green (G), and blue (B) values at the current cursor location. The))) symbol, if it appears, indicates one or more sound files is associated with this image.



Selecting the Color Balance for an Image(s)

NOTE: The information in this section applies only to color images.

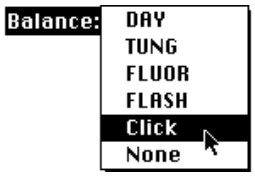
In the following steps you will select an option to correspond to the original lighting conditions under which you took the picture. The option you select will be used for color correction by the driver in the next section when the image is acquired into Photoshop. The values associated with the option chosen from this BALANCE popup menu of the driver image window are substituted during the current acquire action and are used for color balancing subsequent images you acquire until you make another choice from the BALANCE popup menu during this or a subsequent work session.

The actions described in this section do not affect the images stored on the PCMCIA card; instead, these actions only affect the acquired image.

1. If you have not selected an image, and if you are not viewing that image in preview mode, select an image now by clicking on it, and then click the PREVIEW button.

   You can also perform the steps below while in thumbnail mode. However, using preview presents a larger image, providing a better view of the changes you may make (in the next step) to the color balance of an image.

2. Read through all parts of this step and then make the appropriate choice from the BALANCE popup menu.



- The DAY, TUNG, FLUOR, or FLASH choices correspond to daylight, tungsten, fluorescent, or flash lighting conditions.
- The CLICK choice, which is always the preferred option, allows you to provide color balancing data by clicking on a white or light gray area of a thumbnail or a preview. (If there is no white or light gray area, refer to the note just below.)
- After choosing CLICK, the mouse pointer becomes a crosshair. Click on a white or light gray area of the image that is not overexposed. Choose a spot on the image where each of the red (R), green (G), or blue (B) color values displayed on the line below the image are as high as possible, but lower than 255. White balance values are calculated based on the point at which you clicked.

  NOTES: When you click, if you see a message that one of the colors is saturated, select another point for balancing.

  If you are in thumbnail mode the crosshair cursor changes back to a pointer after one click; however, if you are in preview mode the cursor stays as a crosshair. Working in Preview allows you to repeatedly use this option without the need to choose CLICK from the BALANCE menu after each mouse click.

  If there is no white or light gray area, choose another balance option, or take a photograph of a neutral gray or white card — for example KODAK Gray Cards, Publication No. R-27 — under the same lighting conditions that existed when the image was taken. Click on the preview or thumbnail of the image of the neutral gray or white card to set color correction values for these lighting conditions; then acquire the desired image.

- The NONE choice can be used for images made under unusual lighting conditions when the other choices do not provide the desired results.

Now, select the choice you want from the popup BALANCE menu.

Acquiring Images with the KODAK Driver for Adobe Photoshop

You are now ready to acquire an image into Photoshop. Acquiring an image copies its image data from the PCMCIA card into Photoshop, where the acquired image opens into a Photoshop window.

1. Click on the ACQUIRE button; a progress box appears. (You can cancel acquiring by clicking the CANCEL button if one appears in the progress box, or by pressing command-period.)

   NOTES: You can also double-click on the thumbnail image (not the preview image) as an alternate to the two-step process of selecting one image and then clicking the ACQUIRE button. Images can be acquired while in preview or thumbnail mode.

   If you are using Adobe Photoshop version 2.5 or later, you can select more than one image before clicking ACQUIRE; each image will open into a separate Photoshop window.

2. Wait as the driver image window closes and the image appears in a Photoshop window.

3. (Optional) Edit the acquired image using Photoshop features. If you know that you will be using only a cropped portion of the image, you may want to complete that cropping now while in Photoshop. This will result in a smaller file when saved to disk.

4. (Optional) Save the image to the Macintosh computer hard disk. You cannot save the Photoshop image to the PCMCIA card while it is in the DCS 465 Camera Back.

   IMPORTANT: If you have not made any changes to the acquired image while in Photoshop, and you click the close box of the acquired image window or choose CLOSE from the Photoshop FILE menu or quit Photoshop, the window will close without asking you if you want to save it. Therefore, be sure you save any acquired images you do not want to lose before closing their windows or quitting Photoshop.

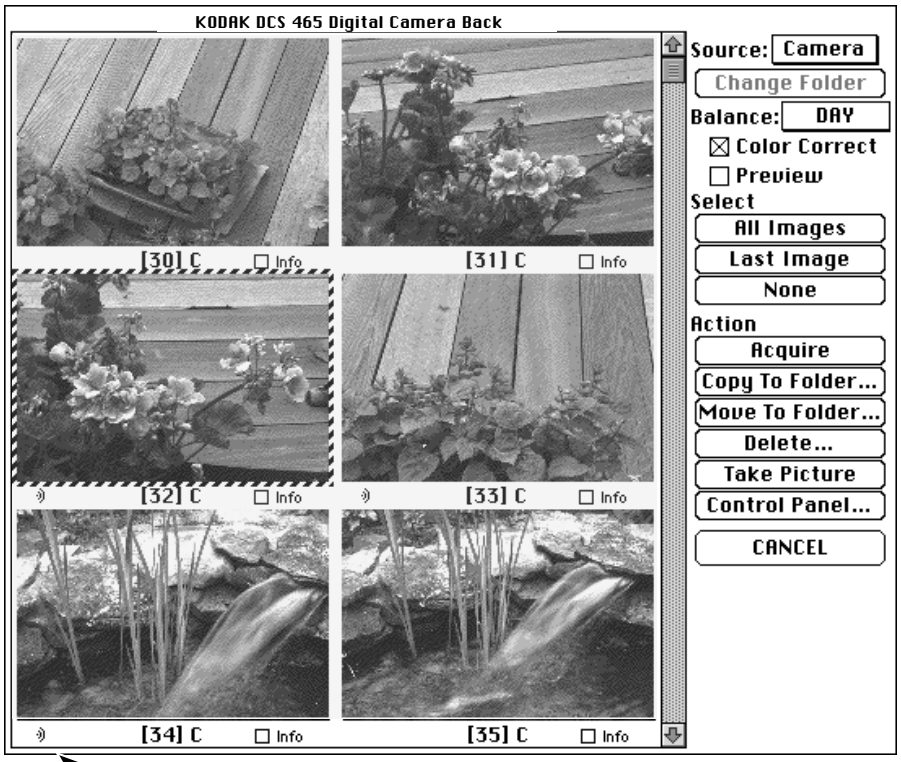
5. (Optional) Repeat the steps of the last several sections and acquire and save additional images.
6. (Optional) Replace the PCMCIA card in the camera back with another card while connected to the computer and repeat the steps of the last several sections; however, do not remove a card while the red Card Busy light on the camera back is blinking. If you do you may lose all data on the card.
7. (Optional) Take additional pictures; your new images will appear one-after-another in the driver image window as you take pictures.

   NOTES: If you are using an electrically tripped camera, you will not be able to take pictures (the shutter will not respond) while the Macintosh computer is accessing the PCMCIA card. The computer is accessing the card when the red Card Busy light on the camera back is blinking. Wait until the blinking stops and then take the picture.

   If you are using a mechanically tripped camera and you are taking pictures in rapid succession, do not try to take a new picture until the previous image has been completely written to the PCMCIA card - that is, until the red card busy light on the camera back stops blinking. If you do try to take a picture while the camera back is accessing the card, the shutter will respond. However, an image will not be recorded, and it is possible that light from the second image will distort the first image before it is written fully to the PCMCIA card.

Playing Recorded Sound Files

Sound files that you have recorded when using the camera back are saved to the PCMCIA card as described in chapter 6. Once in the driver, a sound file is represented by a small icon below the lower left hand corner of an image thumbnail, as shown in the following illustration.



When you click on the icon, if a single sound file was recorded, it is played through the Macintosh computer speaker. If multiple sound files were recorded at this point, holding the mouse button down while on the sound file icon displays a popup menu of each sound (named SOUND 1, SOUND 2, etc.). Select an item from the popup menu to play its sound.

NOTES: You can adjust the speaker volume with the "sound" option in the control panels choice on the Apple menu.

A section of this chapter just below describes how to save these files to the Macintosh hard disk and how to delete these files from the PCMCIA card.

Using Other Features of the KODAK Driver for Adobe Photoshop Software

The driver provides a variety of additional features that allow you to work with image and sound files on the DCS 465 Camera Back PCMCIA card and on the Macintosh hard disk. With the driver you can rapidly view some or all of the images, and transfer selected images to the Macintosh hard disk for archival purposes or for later retrieval into Photoshop. You can then delete some or all of the images on the camera back PCMCIA card in preparation for making additional images. Sound files can be played through the driver or saved to your Macintosh hard disk.

These features are briefly described in this section, and are explained more fully in chapter 10.

Driver Image Window Buttons and Other Controls

Selecting Images

"Select" multiple images by shift-clicking on the desired images, or click ALL IMAGES or LAST IMAGE. Deselect selected images by clicking the NONE button, or click a single image to select that image and deselect any other selected images.

DELETE Button

Deletes "selected" image files and associated recorded sound data from the PCMCIA card. The button is dimmed until you select an image(s).

IMPORTANT: Selected files are deleted whether they are currently visible in the driver image window or not.

COPY TO FOLDER Button

Copies “selected” image files and recorded associated sound data from the PCMCIA card to the Macintosh hard disk. Each image and each sound becomes a separate file in a folder on the Macintosh computer. The saved image files are called archive files. The button is dimmed until you select an image(s). Images can be copied to a preexisting folder or to a folder you create while using this feature.

NOTE: Refer to the IMPORTANT CAUTIONS later in this chapter about opening archive files directly into Photoshop without first acquiring them, and about the importance of calibration (CAL) files when images are copied to a folder.

MOVE TO FOLDER Button

Performs the same function as COPY TO FOLDER, except that after copying the data, this choice presents a dialog box providing the option of deleting the files from the PCMCIA card.

NOTE: Refer to the IMPORTANT CAUTIONS later in this chapter about opening archive files directly into Photoshop without first acquiring them, and about the importance of calibration (CAL) files when images are moved to a folder.

TAKE PICTURE Button

Issues a command that causes the camera back to take a picture. This button works only when the camera back is used with an electrically tripped camera.

SOURCE Popup Menu

Allows you to switch between files on the DCS 465 Camera Back (choose CAMERA from the popup menu), or archive files on the Macintosh computer (choose FOLDER from the popup menu).

CHANGE FOLDER Button

Closes the current folder whose images are displayed in the driver image window, and replaces the current contents of the driver image window with the contents of another folder of archive files you choose from the dialog box displayed by this option. This button is dimmed unless you select FOLDER as the SOURCE.

COLOR CORRECT

Enhances color in many images when acquired. If the acquired image quality is unsatisfactory, you may wish to return to the driver image window and acquire the image with this option off. The suggested value is "on."

Other Features

Taking Pictures while Connected to a Computer

You can take pictures with the camera back while it is connected to a computer. For a full explanation refer to the configuration section of chapter 9.

Using the DCS 465 Camera Back without a PCMCIA Card

You can use the DCS 465 Camera Back without a PCMCIA card only if you are connected to a computer and the driver image window is opened. For a full explanation refer to chapter 9.

Creating Monochrome Images with Your Color DCS 465 Camera Back

You can use Adobe Photoshop to create monochrome images from color images taken with a color camera back. For a full explanation refer to chapter 10.

IMPORTANT CAUTIONS when Using the DCS 465 Camera Back with a Computer

- Do not open image archive files (files that you create by copying/moving images to the Macintosh hard disk) with Photoshop or other image software and then resave the data with the same filename. The image files you copied/moved contain several parts — one section with a TIFF version of the thumbnail, and then another section with the full image data. When you open the file with Photoshop, only the TIFF thumbnail is opened, and if saved, only the thumbnail is saved — not the full image data. For this reason, you should only open these files from within the driver image window using the CHANGE FOLDER button as described just above; this will ensure that you obtain the image data as well as the thumbnail.
- Do not disconnect the DCS 465 Camera Back from the computer while the computer is on.
- When you copy or move images from a PCMCIA card to your hard disk with the COPY TO FOLDER or MOVE TO FOLDER commands, the calibration (CAL) file(s) associated with the camera back(s) used to take the selected images is also copied to the folder with the images. The calibration file(s) are needed subsequently to display and/or acquire the images. For that reason it is very important that you do not delete any CAL files you find in folders with your images. The calibration filename is your camera back serial number followed by a ".cal" suffix. For example, if the serial number of your camera is 465-1006, the calibration filename would be 465-1006.cal.

- If you transport your images to another computer system (perhaps you are distributing unacquired images to others at a different location at which the software driver has been installed), be certain that you also transport the calibration (CAL) files found in the folder with the images. You, or others, will not be able to acquire those images unless their associated CAL file(s) are available; the CAL files should be placed in the same folder as the images.

Quitting

Complete these steps when you have completed your work with the DCS 465 Camera Back and the Macintosh computer.

NOTE: As mentioned at the start of this chapter, the settings you choose while in the driver image window are maintained, and will be in effect the next time you enter the driver image window.

1. (Optional) Choose KODAK DCS 465 again from the ACQUIRE submenu to return to the driver image window; copy/move images to the Macintosh hard disk, and delete unwanted images. Deleting images will make room on the PCMCIA card for additional images.
2. Acquire additional images or choose CANCEL to leave the driver image window.
3. Save opened Photoshop acquired images as desired.

   IMPORTANT: Recall as described earlier in this chapter that if you have not made any changes to an acquired image while in Photoshop, and you quit Photoshop, the window will close without asking you if you want to save it. Therefore, be sure you use one of the SAVE commands from the FILE menu to save any acquired images you do not want to lose before quitting Photoshop.
4. Choose QUIT from the Photoshop FILE menu.
5. Choose SHUT DOWN from the Macintosh SPECIAL menu.
6. Turn off other SCSI devices if present.
7. (Optional) Disconnect the AC battery charger/adapter if it is connected.
8. (Optional) Disconnect the DCS 465 Camera Back from the computer.

8

Accessing DCS 465 Camera Back Images from a PC

This chapter is a tutorial that describes how to use the DCS 465 Camera Back while connected to your PC, including how to:

- Access the Kodak Driver for TWAIN-compliant PC applications.
- View images with the Kodak Driver for TWAIN-compliant PC applications.
- Select the color balance for an image(s).
- Acquire images from the DCS 465 Camera Back into TWAIN-compliant PC applications.
- Play recorded sound files.
- Use other features of the Kodak Driver for TWAIN-compliant PC applications, including a listing of cautions when using the camera back.

The DCS 465 Camera Back is designed to be used in the field or while connected to your computer. While connected, you can use the camera back and the PC in conjunction with each other, or you can use either independently of the other. While connected, you use the supplied software driver to:

- Acquire image files into your TWAIN-compliant PC application. This means that individual image files from your PCMCIA card are opened into separate windows in your application. Once acquired you can use your application features to edit the image, and to save the file in the variety of file formats provided by your application.
- Access and manage (for example delete) image and sound files on the PCMCIA card in your camera back.
- Move image and sound files directly from the PCMCIA card to your PC hard disk.

NOTES: This chapter assumes that you have installed the Kodak Driver for TWAIN-compliant PC applications and that you know how to connect the DCS 465 Camera Back to your PC. Refer to chapter 5 for information if needed.

The settings you choose while in the driver image window are maintained automatically from session to session.

Accessing the DCS 465 Camera Back from the Driver

Repeat the steps below each time you want to access the driver.

1. If the DCS 465 Camera Back and your PC are not connected, turn the computer off and connect them now by following the directions in chapter 5.
2. Connect the AC battery charger/adapter to the camera back as described in chapter 5. Although this step is optional, we recommend it whenever the camera back is connected to a computer.
3. With the computer off, turn on the DCS 465 Camera Back by pressing the record button, or operate the camera back while connected to the AC battery charger/adapter which places the camera back in a continual “on” state.
4. Turn on the PC.
5. If your PC has not been configured to run Windows automatically, run it now.

6. If one is not present, insert a PCMCIA card into the camera back.

   NOTES: As you work with the camera back and the computer, you can insert and remove cards at any point in the process; however, do not remove a PCMCIA card while the red Card Busy light on the camera back is blinking. If you do, you may lose all data on the card.

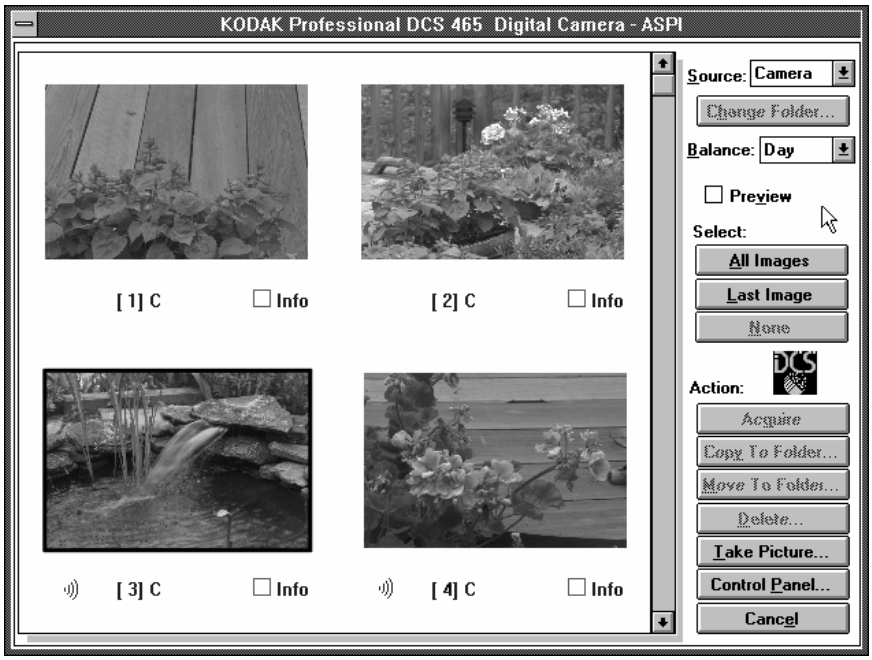
   Use extreme care with PCMCIA cards, as they are easily damaged — especially if dropped. If dropped, you may destroy the PCMCIA card and lose all of your data on the card.

7. Run your TWAIN-compliant PC application.
8. Follow the steps provided in chapter 5 for accessing the driver image window. (Examples of the steps you follow for several different applications appear there.)

9. Wait as the driver image window appears.

NOTES: If a single large image appears, click the PREVIEW choice "off" to replace that larger preview image with the smaller images.

The number of images in each row and in each column is a function of the size of your monitor.



NOTES: Instead of the dialog box above you may see a message that the camera back was not found. If you do, follow the troubleshooting suggestions in the message. Additional information regarding this and other messages appears in the "Messages" section of chapter 11.

Instead of one of the thumbnails, you may see the message "Calibration file (. . .) is missing." For an explanation refer to this message in the "Messages" section of chapter 11 or to "Calibration (CAL) Files" in chapter 9.

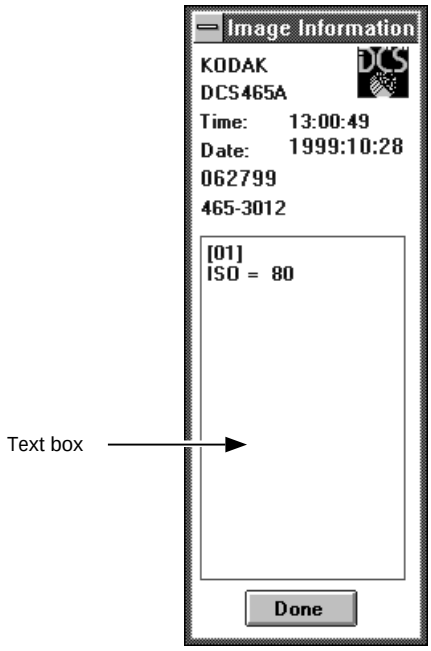
Viewing Images with the Kodak Driver for TWAIN-Compliant PC Applications

The driver image window displays thumbnails of images from the DCS 465 Camera Back PCMCIA card. A thumbnail is a subsample of data from the full image. Thumbnails appear in the driver image window in the same logical order that images appear on the DCS 465 Camera Back PCMCIA card. An image number appears beneath each image. A “C” after the image number — if it appears — indicates a color image. Depending on the size of your monitor, you will see two or more thumbnails on each row, and two or more rows of thumbnails.

You can scroll through the images by moving the vertical scroll box or scroll arrows on the window, or by pressing the Page Up, Page Down, Home, or End keys on the keyboard.

1. Scroll, if needed, until the image you want to acquire (move into a window in your application) appears in the driver image window.

2. (Optional) Click once on the small square "INFO" box beneath the lower right corner of an image; an information box opens at the right of the driver image window.



The information box displays data about the status of the camera back when the image was taken. Included are: time (displayed in 24-hour format) and date the image was made, firmware version number (a date), camera back serial number, the image number, and the ISO setting.

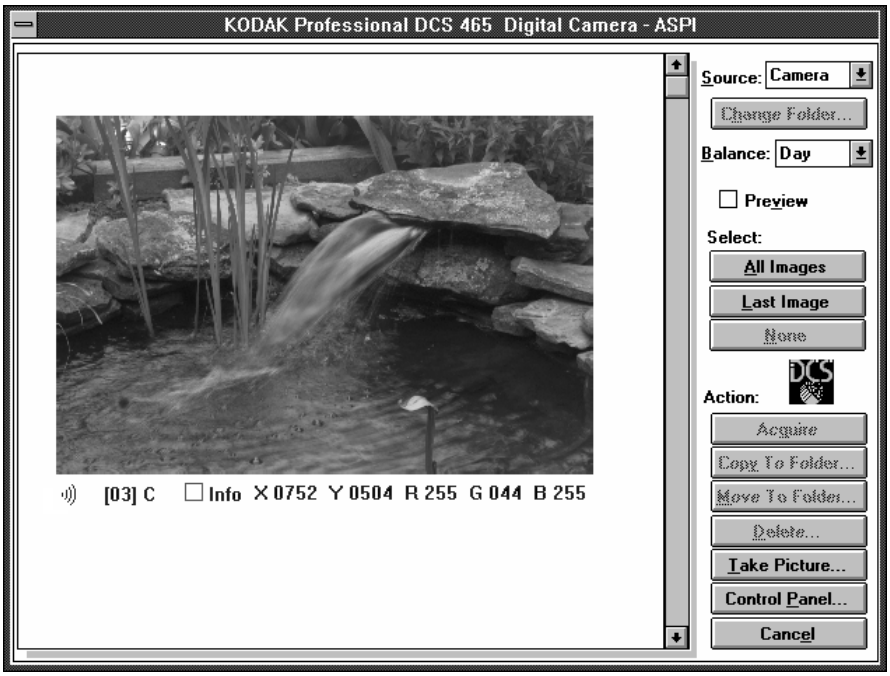
You can type descriptive material about the image into the text box. In total, 250 characters of information can appear in the box.

NOTE: The DCS 465 Camera Back battery maintains its time and date. You can use the driver to update them if they are incorrect. First make certain that your computer system clock shows the correct time and date. Then update these data in the camera back by clicking the CONTROL PANEL button of the driver image window and then clicking the SET CLOCK button of the control panel.

3. If you have opened the information box, click its DONE button to close it.
4. Click once on the image you want. A narrow border appears around the image in the driver image window, as shown on one image in the driver image window included earlier in this chapter.

5. (Optional) Click on PREVIEW. You see a single, enlarged version of the image.

   The preview image appears in color (if it was taken with a color model of the camera back and if you have a color monitor). Data below the image indicate the image number, a “C” for a color image, the current X and Y pixel location of the crosshair cursor on the preview image, and the red (R), green (G), and blue (B) values at the current cursor location. The ·)) symbol, if it appears, indicates one or more sound files is associated with this image.



Selecting the Color Balance for an Image(s)

NOTE: The information in this section applies only to color images.

In the following steps you will select an option to correspond to the original lighting conditions under which you took the picture. The option you select will be used for color correction by the driver in the next section when the image is acquired into your application. The values associated with the option chosen from this BALANCE popup menu of the driver image window are substituted during the current acquire action and are used for color balancing subsequent images you acquire until you make another choice from the BALANCE popup menu during this or a subsequent work session.

The actions described in this section do not affect the images stored on the PCMCIA card; instead, these actions only affect the acquired image.

1. If you have not selected an image, and if you are not viewing that image in preview mode, select an image now by clicking on it, and then click the PREVIEW button.

   You can also perform the steps below while in thumbnail mode. However, using preview presents a larger image, providing a better view of the changes you may make (in the next step) to the color balance of an image.

2. Read through all parts of this step and then make the appropriate choice from the BALANCE popup menu.

   - The DAY, TUNG, FLUOR, or FLASH choices correspond to daylight, tungsten, fluorescent, or flash lighting conditions.

- The CLICK choice, which is always the preferred option, allows you to provide color balancing data by clicking on a white or light gray area of a thumbnail or a preview. (If there is no white or light gray area, refer to the note just below.)

  After choosing CLICK, the mouse pointer becomes a crosshair. Click on a white or light gray area of the image that is not overexposed. Choose a spot on the image where each of the red (R), green (G), or blue (B) color values displayed on the line below the image are as high as possible, but lower than 255. White balance values are calculated based on the point at which you clicked.

  NOTES: When you click, if you see a message that one of the colors is saturated, select another point for balancing.

  If you are in thumbnail mode the crosshair cursor changes back to a pointer after one click; however, if you are in preview mode the cursor stays as a crosshair. Working in Preview allows you to repeatedly use this option without the need to choose CLICK from the BALANCE menu after each mouse click.

  If there is no white or light gray area, choose another balance option, or take a photograph of a neutral gray or white card — for example KODAK Gray Cards, Publication No. R-27 — under the same lighting conditions that existed when the image was taken. Click on the preview or thumbnail of the image of the neutral gray or white card to set color correction values for these lighting conditions; then acquire the desired image.

- The NONE choice can be used for images made under unusual lighting conditions when the other choices do not provide the desired results.

Now, select the choice you want from the popup BALANCE menu.

Acquiring Images with the Driver for TWAIN-compliant PC Applications

You are now ready to acquire an image. Acquiring an image copies its image data from the PCMCIA card into your application, where the acquired image opens into a window.

1. Click on the ACQUIRE button; a progress box appears. (You can cancel acquiring by pressing the ESC key.)

   NOTES: You can also double-click on the thumbnail image (not the preview image) as an alternate to the two-step process of selecting one image and then clicking the ACQUIRE button. Images can be acquired while in preview or thumbnail mode.

   If it is supported by your TWAIN application, you can select more than one image before clicking ACQUIRE; each image will open into a separate window. To select multiple images shift-click (hold the Shift key down while clicking on images one after another), or click ALL IMAGES.

2. Wait as the driver image window closes and the image appears in a window in your application.
3. (Optional) Edit the acquired image using features of your application. If you know that you will be using only a cropped portion of the image, you may want to complete that cropping now while in your application. This will result in a smaller file when saved to disk.
4. (Optional) Save the image to the PC hard disk. You cannot save the image to the PCMCIA card while it is in the DCS 465 Camera Back.
5. (Optional) Repeat the steps of the last several sections and acquire and save additional images.

6. (Optional) Replace the PCMCIA card in the camera back with another card while connected to the computer and repeat the steps of the last several sections; however, do not remove a card while the red Card Busy light on the camera back is blinking. If you do you may lose all data on the card.

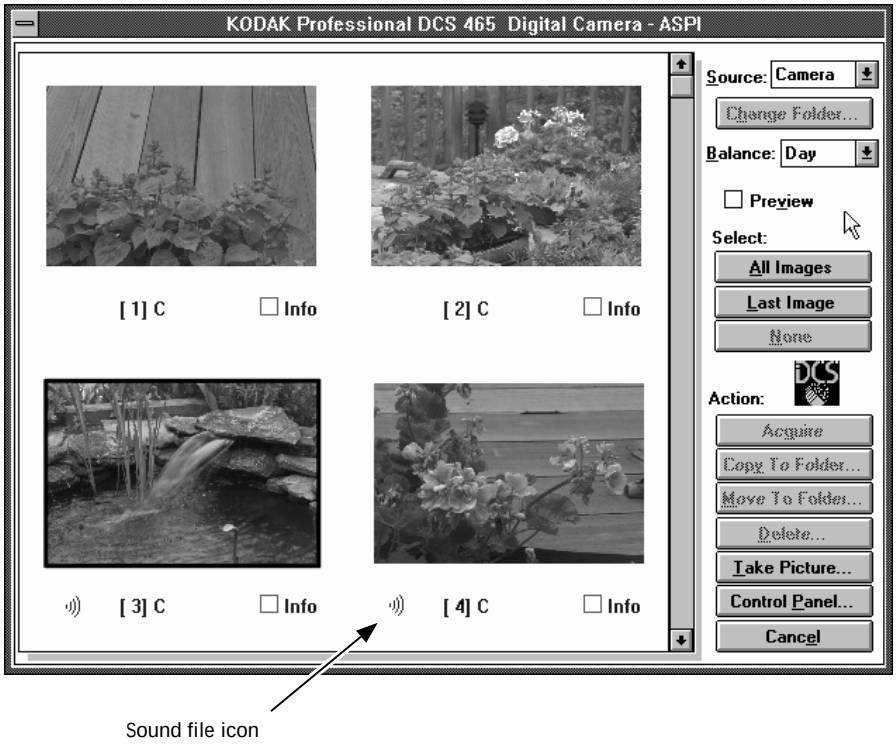
7. (Optional) Take additional pictures; your new images will appear one-after-another in the driver image window as you take pictures.

   NOTES: If you are using an electrically tripped camera, you will not be able to take pictures (the shutter will not respond) while the PC is accessing the PCMCIA card. The computer is accessing the card when the red Card Busy light on the camera back is blinking. Wait until the blinking stops and then take the picture.

   If you are using a mechanically tripped camera and you are taking pictures in rapid succession, do not try to take a new picture until the previous image has been completely written to the PCMCIA card - that is, until the red card busy light on the camera back stops blinking. If you do try to take a picture while the camera back is accessing the card, the shutter will respond. However, an image will not be recorded, and it is possible that light from the second image will distort the first image before it is written fully to the PCMCIA card.

Playing Recorded Sound Files

Sound files that you have recorded when using the camera back are saved to the PCMCIA card as described in chapter 6. Once in the driver, a sound file is represented by a small icon below the lower left hand corner of an image thumbnail, as shown in the following illustration.



When you click on the sound file icon you see a list of sounds; select the sound file you want to play. To play sounds you must have a sound board installed in your PC.

NOTE: A section of this chapter just below describes how to save these files to the PC hard disk and how to delete these files from the PCMCIA card.

Using Other Features of the Driver for TWAIN-Compliant PC Applications

The driver provides a variety of additional features that allow you to work with image and sound files on the DCS 465 Camera Back PCMCIA card and on the PC hard disk. With the driver you can rapidly view some or all of the images, and transfer selected images to the PC hard disk for archival purposes or for later retrieval. You can then delete some or all of the images on the camera back PCMCIA card in preparation for making additional images. Sound files can be played through the driver (if supported by your PC) or saved to your PC hard disk.

If your PC has a PCMCIA card reader, you can place a PCMCIA card that has been used with the camera back into that reader and access image and sound files on it with the TWAIN driver.

These features are briefly described in this section, and are explained more fully in chapter 11.

Driver Image Windows Buttons and Other Controls

Selecting Images

"Select" multiple images by shift-clicking on the desired images, or click ALL IMAGES or LAST IMAGE. Deselect selected images by clicking the NONE button, or click a single image to select that image and deselect any other selected images.

DELETE Button

Deletes “selected” image files and associated recorded sound data from the PCMCIA card. The button is dimmed until you select an image(s).

IMPORTANT: Selected files are deleted whether they are currently visible in the driver image window or not.

COPY TO FOLDER Button

Copies “selected” image files and recorded associated sound data from the PCMCIA card to the PC hard disk. Each image and each sound becomes a separate file in a folder on the PC. The saved image files are called archive files. The button is dimmed until you select an image(s). Images can only be copied to a preexisting folder (preexisting directory or subdirectory).

NOTE: Refer to the IMPORTANT CAUTIONS later in this chapter about opening archive files directly into your application without first acquiring them, and about the importance of calibration (CAL) files when images are copied to a folder.

MOVE TO FOLDER Button

Performs the same function as COPY TO FOLDER, except that after copying the data, this choice presents a dialog box providing the option of deleting the files from the PCMCIA card.

NOTE: Refer to the IMPORTANT CAUTIONS later in this chapter about opening archive files directly into your application without first acquiring them, and about the importance of calibration (CAL) files when images are moved to a folder.

TAKE PICTURE Button

Issues a command that causes the camera back to take a picture. This button works only when the camera back is used with an electrically tripped camera.

SOURCE Popup Menu

Allows you to switch between files on the DCS 465 Camera Back (choose CAMERA from the popup menu), or archive files on the PC (choose FOLDER from the popup menu).

CHANGE FOLDER Button

Closes the current folder whose images are displayed in the driver image window, and replaces the current contents of the driver image window with the contents of another folder of archive files you choose from the dialog box displayed by this option. This button is dimmed unless you select FOLDER as the SOURCE.

If your PC has a PCMCIA card reader, you can place a PCMCIA card that has been used with the camera back into that reader and access image and sound files on it with the TWAIN driver.

Other Features

Taking Pictures while Connected to a Computer

You can take pictures with the camera back while it is connected to a computer. For a full explanation refer to the configuration section of chapter 9.

Using the DCS 465 Camera Back without a PCMCIA Card

You can use the DCS 465 Camera Back without a PCMCIA card only if you are connected to a computer and the driver image window is opened. For a full explanation refer to chapter 9.

Creating Monochrome Images with Your Color Camera Back

You may be able to use your application to create monochrome images from color images taken with a color camera back. For one example refer to chapter 11.

IMPORTANT CAUTIONS when Using the DCS 465 Camera Back with a PC

- Do not open image archive files (files that you create by copying/moving images to the PC hard disk) with image software and then resave the data with the same filename. The image files you copied/moved contain several parts — one section with a TIFF version of the thumbnail, and then another section with the full image data. When you open the file with an image editing application, only the TIFF thumbnail may be opened, and if saved, only the thumbnail may be saved — not the full image data. For this reason, you should only open these files from within the driver image window using the CHANGE FOLDER button as described just above; this will ensure that you obtain the image data as well as the thumbnail.
- Do not disconnect the DCS 465 Camera Back from the computer while the computer is on.
- When you copy or move images from a PCMCIA card to your hard disk with the Copy to Folder or Move to Folder commands, the calibration (CAL) file(s) associated with the camera back(s) used to take the selected images is also copied to the folder with the images. The calibration file(s) is needed subsequently to display and/or acquire the images. For that reason it is very important that you do not delete any CAL files you find in folders with your images.

- If you transport your images to another computer system (perhaps you are distributing unacquired images to others at a different location at which the software driver has been installed), be certain that you also transport the calibration (CAL) files found in the folder with the images. You, or others, will not be able to acquire those images unless their associated CAL file(s) are available; the CAL files should be placed in the same folder as the images.

Quitting

Complete these steps when you have completed your work with the DCS 465 Camera Back and the PC.

NOTE: As mentioned at the start of this chapter, the settings you choose while in the driver image window are maintained, and will be in effect the next time you enter the driver image window.

1. (Optional) Return to the driver image window; copy/move images to the PC hard disk, and delete unwanted images. Deleting images will make room on the PCMCIA card for additional images.
2. Acquire additional images or choose CANCEL to leave the driver image window.
3. Save opened acquired images as desired.
4. Quit your application.
5. Shut down your computer.
6. Turn off other SCSI devices if present.
7. (Optional) Disconnect the AC battery charger/adapter if it is connected.
8. (Optional) Disconnect the DCS 465 Camera Back from the computer.

9

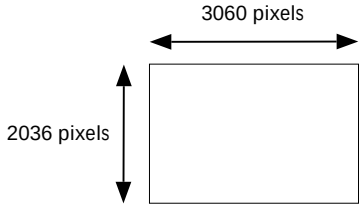
Reference — DCS 465 Camera Back

This section of the manual explains and describes the following:

- KODAK camera back and Imager.
- Camera back controls.
- PCMCIA cards.
- DCS 465 Camera Back operating configurations.
- Battery and AC battery charger/adapter.
- Recorded sound.
- On/off state of the camera back.
- Troubleshooting the DCS 465 Camera Back.
- Cleaning a dirty filter glass or a dirty imager.
- Calibration (CAL) files.

DCS 465 Camera Back and Imager

The KODAK camera back incorporates a charge coupled device (CCD) full-frame imager that collects light resulting in a file containing 6.0 megabytes of data. There are two versions of the imager, one in the color camera back, and another in the monochrome camera back. The CCD imager is 18.4 mm x 27.6 mm. This produces a field of view equal to using a lens with 1.3 times the focal length of the lens in use.



When you take a picture, light passes through the lens onto the imager; each pixel receives and stores a specified amount of light. These data — for one image — leave the imager chip in analog form, and are converted to digital form and stored with other data in dynamic random access memory (DRAM).

Once the data are in DRAM, the data from the image are transferred to the PCMCIA card. Hardware in the camera back generates a thumbnail from the image data. The thumbnail is a subsample of image data, with data sampled from every sixteenth pixel. The thumbnail is subsequently stored with the full image on the PCMCIA card.

There are sixteen megabytes of DRAM in the DCS 465 Camera Back. The camera system is ready for the first shot within 0.25 second after the shutter release is depressed, is ready for the second shot approximately one minute later and then subsequent images can be taken at intervals of approximately eight seconds. The interval time of eight seconds was recorded when using an Intergral Peripherals Viper 170 model 8170PA PCMCIA card. Your times may vary depending on the card you use.

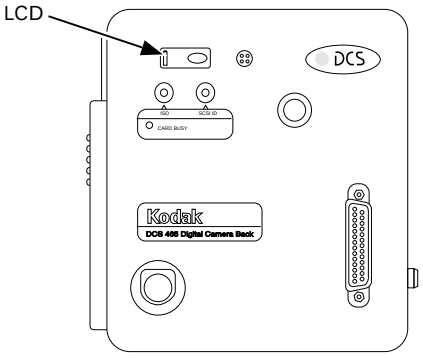
You can use one of the supplied software drivers on your computer to update firmware (nonvolatile memory) in the camera back that controls how the camera works. This is a key feature since this design means it is possible for you to update camera firmware yourself as it may be released by Kodak instead of returning the camera for firmware updates.

A self-test of camera performance is available to you through a button on the Control Panel of the software driver. This can be helpful for field troubleshooting before you call Kodak. Refer to chapters 10 (Macintosh) or 11 (PC).

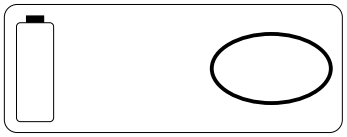
DCS 465 Camera Back Controls

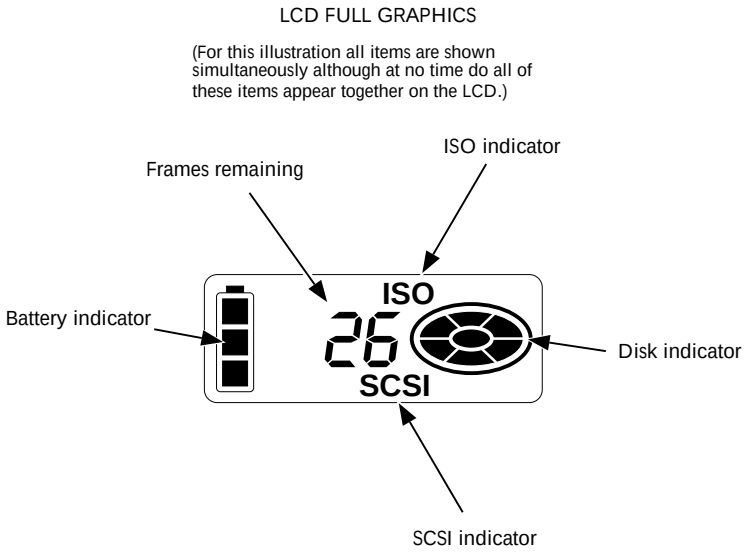
Liquid Crystal Display (LCD)

A liquid crystal display (LCD) on the back of the KODAK camera back provides status information for the DCS 465 Camera Back.



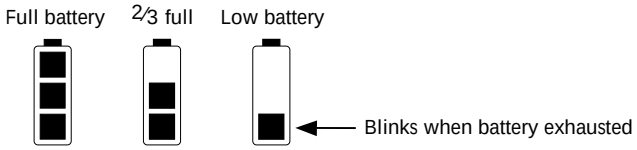
LCD CAMERA-ASLEEP GRAPHICS





Battery Indicator

When the DCS 465 Camera Back is awake, the battery indicator displays the amount of battery life — full, 2/3 full, and 1/3 remaining — in the battery in the camera back. When the battery life is exhausted, the bottom indicator blinks, and the battery needs to be recharged. (Refer to “Battery” later in this chapter for information on battery life.)



When you operate with the AC battery charger/adapter connected, the three segments of this icon light repeatedly in turn from bottom to top while the battery is charging. When it is fully charged all three segments remain lit.

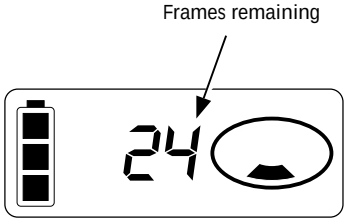
Image Numbering Systems

Two different numbering systems are used by the DCS 465 Camera Back as explained in this section.

NOTE: The frame or image counter provided by your camera is not used by the DCS 465 Camera Back.

1. Frames Remaining Indicator

The frames remaining indicator displays the number of additional pictures that can be stored on the PCMCIA card currently in the camera back.



The number of images that can be stored on a PCMCIA card depends on the storage capability of the card. For example, a 170 megabyte (MB) card can hold up to 26 images.

. . . . . .

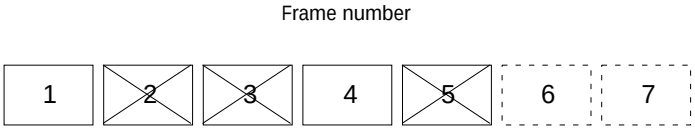
2. Image Reference Number

A *separate* image number is assigned by the camera back to each picture you take. These numbers go up by one as each picture is taken. After reaching number 99, the image reference numbers cycle back to 1, 2, etc.

This image reference number is displayed beneath each image in the software driver image window.

The number assigned to each image may be higher than the maximum number of images that can be stored on the PCMCIA card, since images stored on the PCMCIA card retain their numbers when images with lower numbers are deleted.

When you delete images (with the software driver), existing images on the PCMCIA card are not renumbered. Consider the figure below. Suppose that you had an empty PCMCIA card, took five pictures, and then deleted images 2, 3, and 5 with the software driver. Image 4 is not renumbered. As new pictures are stored to the PCMCIA card, they are given the next higher number that has not been previously used for an image. In the figure below, new images will be numbered 6, 7, …



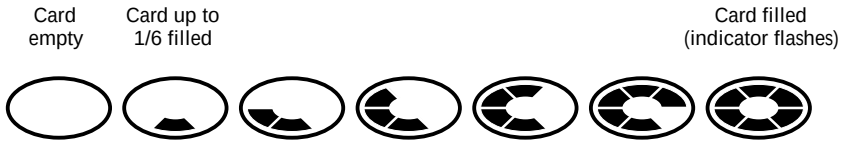
The highest frame number is 99. It is possible that you will reach this frame number by a continuous process of making images, deleting some, and then making additional images. When you reach frame number 99, the next picture you take will be numbered 1, then 2, then 3, and so on, even if those numbers are already in use.

Therefore it is possible that you may have several images on a PCMCIA card with the same number. Duplicate image numbers do not cause any

functional problems; however, you can avoid potential confusion by occasionally erasing or formatting the PCMCIA card after copying all needed images to your computer hard disk.

Disk Indicator

The disk indicator shows the amount of the available PCMCIA card filled with images. When the entire disk indicator flashes, the PCMCIA card in the camera back is full.

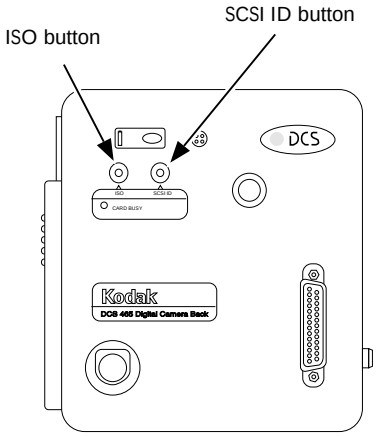


Disk Error Indicator

Two characters, an “E” followed by a single digit (for example “E2”) — if they appear on the LCD — indicate that an error has occurred on the PCMCIA card. If this occurs, remove and reinsert the PCMCIA card (or try another card if available), and retry the operation. If you continue to have problems, refer to the “Troubleshooting” section of this chapter and to the discussion of FORMAT DISK in chapters 10 (Macintosh) or 11 (PC).

Control Buttons

Two control buttons — ISO and SCSI ID — are provided on the KODAK camera back. Both are recessed in the housing and are operational when pressed with a fingertip or other blunt object.



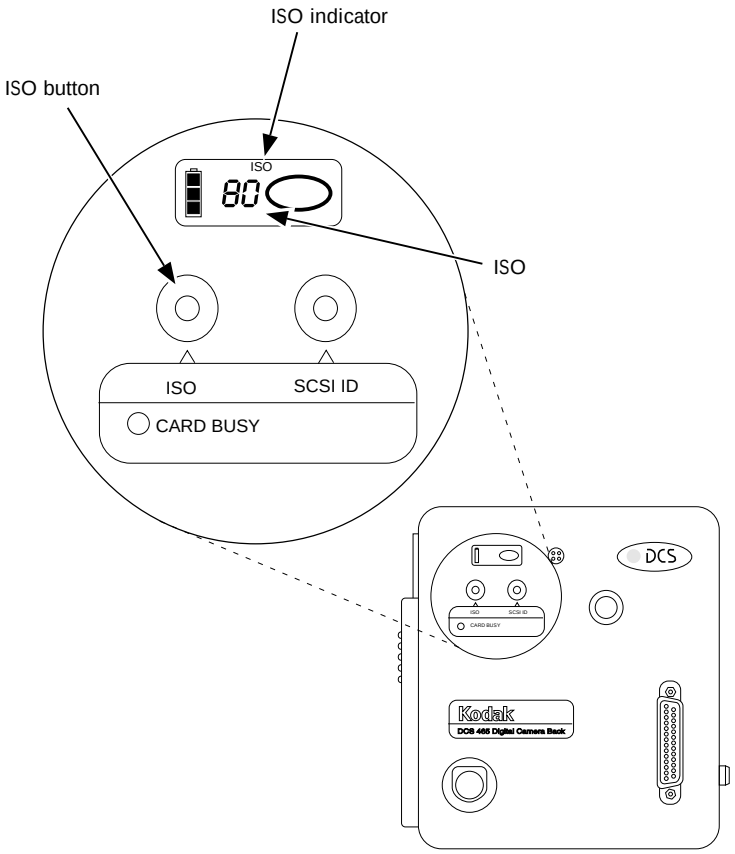
ISO Button and ISO Indicator

You use the ISO button to set the ISO on the camera back.

To use the ISO button, if you are not connected to a computer or the AC battery charger/adapter, first press the record button to wake the DCS 465 Camera Back. (If you are connected to a computer that is on, or to the AC battery charger/adapter, the camera back will be awake; you do not need to press the record button.) Then press ISO once to wake ISO mode. The characters “ISO” — the ISO indicator — and the current ISO setting appear on the camera back LCD. Then press ISO again to select another supported ISO setting.

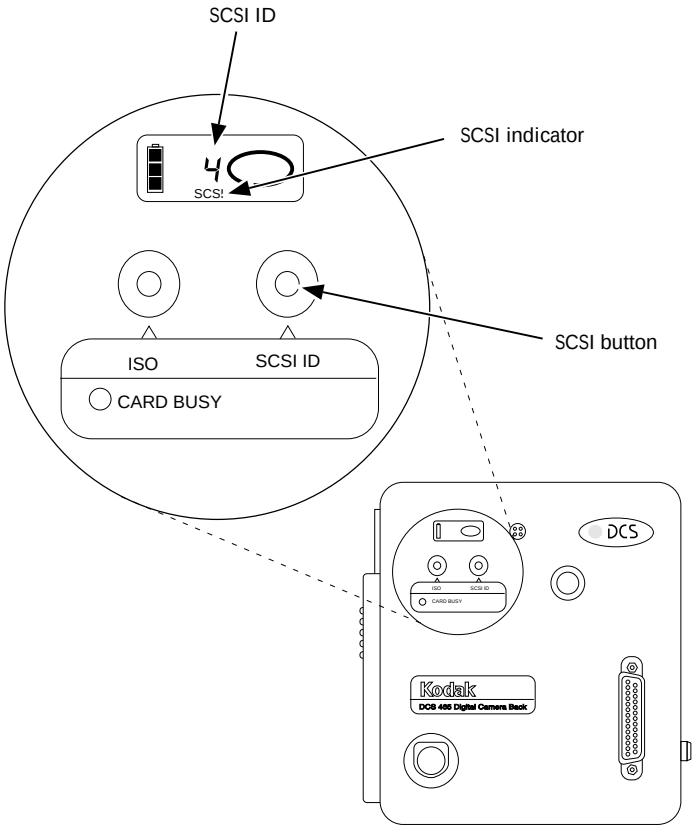
As long as the characters “ISO” appear on the LCD, you can press the ISO button again and again to rotate through supported ISO setting. If a single ISO setting is available, there is no change in the displayed setting when you press this button. If more than one ISO setting should become available for your camera back, the ISO indicator cycles to the next supported ISO.

Several seconds after you stop pressing the button, ISO mode turns off; reactivate it, if needed, as described above, and press the ISO button again.



SCSI ID Button and SCSI Indicator

You use the SCSI ID button to set the DCS 465 Camera Back SCSI ID. The setting is important when the DCS 465 Camera Back is connected to your computer.



To set the SCSI ID, first make sure the camera back is not connected to your computer. Then wake the camera back by pressing the record button (this is not necessary if you are connected to the AC battery charger/adapter). Press the SCSI ID button once with your fingertip or other blunt object to wake SCSI mode. The characters "SCSI" — the SCSI indicator — appear on the camera back LCD as does the current SCSI ID value, a single digit from 0 to 7, "PC," or "PP."

As long as the characters "SCSI" appear on the LCD, you can press the SCSI ID button again and again to rotate through the available values. Stop when you have selected the SCSI ID you want. Several seconds after you press the SCSI ID button for the last time, SCSI mode turns off; reactivate it — if needed — and press the SCSI ID button again.

Select the appropriate SCSI ID before you connect the DCS 465 Camera Back to your computer. Select an ID that is different from the SCSI ID of any other connected SCSI devices.

NOTE: The use of this feature is also described in chapters 4 (Macintosh) or 5 (PC).

"PC" SETTING FOR LAPTOP CUSTOMERS: Use the "PC" SCSI ID setting only if you will be connecting the camera to a laptop computer using a PCMCIA-to-SCSI II adapter (such as the New Media Bus Toaster), to connect the PCMCIA slot on your laptop (not the camera) to the SCSI connector on the camera. "PC" sets the SCSI ID of the camera to 1 and turns on active termination in the camera.

Laptop users should install and choose the Kodak TWAIN ASPI software driver.

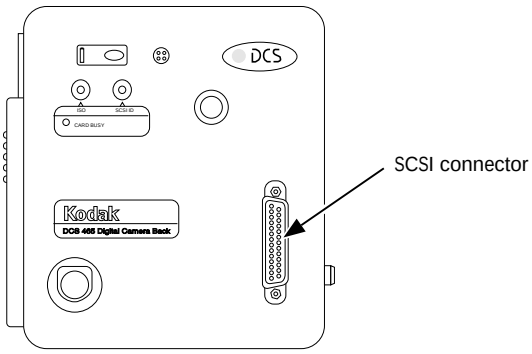
When you finish with the camera in "PC" mode, take the camera out of "PC" mode, turn off the computer and camera. If left in "PC" mode, a fully charged battery will be exhausted in approximately eight hours since the camera can not change to low power mode when this SCSI setting is active.

"PP" SETTING: the "PP" setting, although it appears, is not currently supported and should not be selected.

SCSI Connector

A single 25-pin, female, subminiature D, SCSI connector appears on the KODAK camera back.

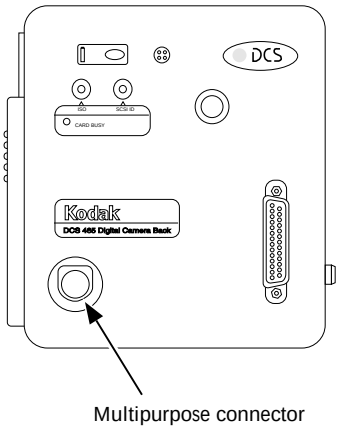
You connect the DCS 465 Camera Back to your computer from this connector with one of the supplied SCSI cables. Once you connect it you can operate the camera back and the computer simultaneously. Detailed directions for making this connection, and for using the camera back in this state appear in chapters 4 (Macintosh) or 5 (PC).



Multipurpose Connector

A 7-pin mini-din connector on the camera back serves several purposes.

- You plug the AC battery charger/adapter directly into this connector.
- As available, you can also plug accessories into this connector. Refer to the appendix “Optional Equipment & Spare Parts List” for additional information.



Multipurpose connector

PCMCIA Cards

"Standard," removable, credit-card sized PCMCIA cards (Personal Computer Memory Card International Association) are used for image storage. The camera back incorporates a PCMCIA-ATA Type III slot.

The camera back saves images to the PCMCIA card currently plugged into the KODAK camera back. You can fill one card, remove it, insert another card, and continue shooting.

These removable, miniaturized media provide great flexibility since you can carry a significant amount of image storage capability with you into the field or the studio. The camera back functions as a card reader, so no separate PCMCIA card reader is required. However, if you have a commercially available PCMCIA card reader for your computer system, you can return only the card to a central site for image retrieval while the camera back remains in the field.

PCMCIA cards are extremely fragile, and are easily damaged — especially if dropped. For this reason, use extreme care with the cards. Dropping a card may destroy it, resulting in the loss of all of your data on the card.

Supported PCMCIA Cards

The DCS 465 Camera Back is designed to accept PCMCIA hard disk cards that support the PCMCIA "ATA" interface, although all such cards may not work. (Refer to the Read Me file on the supplied software driver diskette for information on specific cards known to work with the DCS 465 Camera Back.) The ATA protocol is the same interface used for AT disk drives in PCs. PCMCIA hard disk cards are available in a variety of sizes, for example 105 and 170 megabyte (MB) sizes.

In addition to PCMCIA hard disk cards, the DCS 465 Camera Back will accept flash memory cards if the cards support the ATA protocol. (This means that standard PCMCIA memory SRAM cards are not supported.)

Consult the specifications for your cards to determine if their operating limits (for temperature, humidity, etc.), are more restrictive than those for the DCS 465 Camera Back, and if they are, adhere to those limits.

Card Busy Light

A red Card Busy LED appears on the camera back. When flashing, it indicates that the camera back is accessing — reading from or writing to — a PCMCIA card in place in the slot in the camera back; it is a warning not to remove the installed PCMCIA card. If you do, you may lose all data on the card. Wait until the blinking stops before removing the PCMCIA card.

DOS Formatting and Card Access

The PCMCIA cards used for image storage must be (DOS) formatted. Format it with the camera back using the supplied driver as described in chapters 4 (Macintosh) or 5 (PC).

The image and sound files placed on the cards by the camera system are also DOS format files, meaning that if you have a separate card reader you can use DOS commands on a PC, if available, to manage image files without the software driver. If you have a separate card reader — or other equipment that uses these PCMCIA cards — you can use that equipment to store and retrieve files in a variety of formats on the cards.

Troubleshooting, Disk Recovery, and Fragmentation

If you encounter a problem that you believe is associated with the PCMCIA card, you can perform simple troubleshooting by trying another card if available. Doing so will enable you to determine if the problem is

associated with that single PCMCIA card, or with another part of the camera back. If the problem is with the PCMCIA card, you can try the steps in the next paragraph.

The RECOVER DISK button on the control panel of the software driver, can be used in some circumstances while the camera back is connected to a computer to recover files that have been inadvertently deleted. In addition, since the PCMCIA card is in DOS format, it may be possible to recover an image or sound file using PC utility programs, if available, with file recovery features; doing so requires a separate PCMCIA card reader since these programs cannot access the cards through the camera back. If these actions are unsuccessful, you may need to format the card, an operation which will erase all of your data on the card.

It is possible that a PCMCIA card may become fragmented, meaning that files — such as the large image files — are broken into linked parts on non-contiguous areas of the card. This can occur in several situations, such as when small non-image files are stored in and among image files, meaning that a large number of small unused areas are interspersed on the card, rather than having all empty blocks together on one portion of the card. Fragmentation can result, and if it does, it can result in slowed camera back performance.

If you believe this has occurred, you can delete all files on the card and/or format the card — after saving files as desired to your computer hard disk.

You can also run a utility program (not supplied with the camera back) with “defragger” capability that rearranges existing files into contiguous areas of the PCMCIA card. This in turn frees large blocks on the card, meaning that image files produced by the camera back can be stored in a single contiguous area — more efficient for file storage and retrieval. Using a utility program requires a separate PCMCIA card reader since these programs cannot access the cards through the camera back.

DCS 465 Camera Back Operating Configurations

You can use the camera back in the following configurations.

IMPORTANT: Refer to chapters 4 (Macintosh) or 5 (PC) for specific cabling and termination details.

DCS 465 Camera Back Supported Configurations

Each row of this table represents a supported configuration. Refer to the following pages of this section for additional information.

DCS 465 Camera Back	Your camera	PCMCIA in DCS 465	AC adapter connected	Connected to computer
Yes	Yes	Yes	No	No
Yes	Yes	Yes	Yes	No
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	No (1)	Yes
Yes	Yes	No (2)	Yes	Yes
Yes	Yes	No (2)	No (1)	Yes
Yes	No (3)	Yes	Yes	Yes
Yes	No (3)	Yes	No (1)	Yes

(1) Although this configuration is supported, we recommend you always use the AC adapter when connected to a computer.
(2) A supported image-editing application must be running and the driver image window must be open to obtain images from the camera back in this configuration.
(3) Always protect the imager by using the supplied imager cover when the camera back is not connected to your camera.

Taking Pictures While Connected to the Computer

You can take pictures with your camera and the camera back while connected to the computer (for example in a studio setting). The following considerations apply to this usage.

- The camera back functions independently, so if a PCMCIA card is in the camera back, it is not necessary for the computer to be running the software driver while taking pictures. The camera back will continue to function while connected to the computer even if other software is active or if the computer is off.
- The AC battery charger/adapter can be used with the camera back. We recommend this configuration.
- If you use the camera back while the software driver is running on the computer, images will appear one-after-another in the image window as you take pictures.
- If no PCMCIA card is present in the camera back, each new image replaces the previous one. If you have an image you want to save, be certain that you acquire it or save it to an archive folder before taking another picture.
- Do not take new pictures while an image is being acquired.
- If you are using an electrically tripped camera, the TAKE PICTURE button on the software driver can be clicked to issue a command that directs the camera to take a picture.

Using the DCS 465 Camera Back and a PCMCIA Card

With a PCMCIA card installed in the DCS 465 Camera Back, the unit is portable, and can be used in the large variety of stand-alone shooting situations in which your camera can be used.

Images are stored on the PCMCIA card as you take them. The camera back will not operate once the PCMCIA card is full. When full, you will need to do one or more of the following.

- Attach the DCS 465 Camera Back to the computer, and use the supplied software driver to delete images from the PCMCIA card (after acquiring them from the DCS 465 Camera Back if desired).
- Remove the full PCMCIA card and insert another PCMCIA card with space available for additional images.

Using the DCS 465 Camera Back with a PCMCIA Card While Connected to a Computer

You can use the DCS 465 Camera Back while it is connected directly to a computer, for example in a studio setting. Connections between the two devices are made with the supplied SCSI cable, as described in chapters 4 (Macintosh) or 5 (PC).

The images are automatically and instantly available via the driver image window for moving to the computer. They are displayed in the driver window as soon as they are made, allowing you to determine quickly if the current image is acceptable or not.

Using the DCS 465 Camera Back without a PCMCIA Card While Connected to a Computer

You can use the DCS 465 Camera Back without a PCMCIA card only if you are connected to a computer and running the supplied software driver. In this configuration, you can take a picture, and that single image will appear in the driver image window. You can then acquire the image, or move or copy the image to your computer hard disk.

As you take each subsequent picture, it replaces the single image in the dynamic random access memory in the DCS 465 Camera Back and in the

driver image window; the previous image is lost (even though the image counter is increased by one) unless you have acquired it or copied/moved it to the computer hard disk. Once you see the image in the driver image window, you can process it as if it were an image on a PCMCIA card. If you insert a PCMCIA card into the DCS 465 Camera Back while the image is displayed, the image will be saved to the PCMCIA card, if there is room on the card.

If there is no PCMCIA card in the camera back, you can only take a picture if the driver image window is opened.

Battery and AC Battery Charger/ Adapter

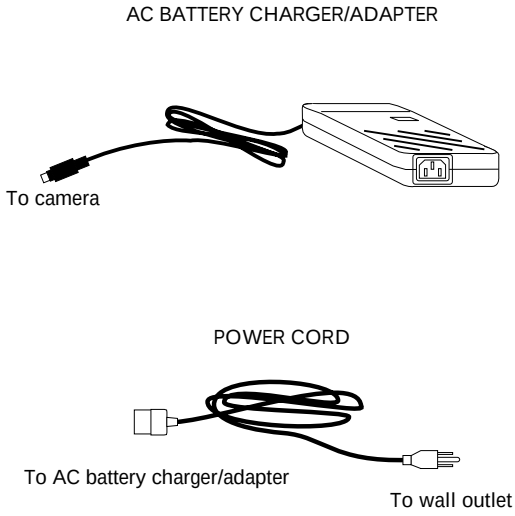
Battery

The DCS 465 Camera Back incorporates a single, rechargeable nickel hydride battery. In typical shooting situations, a fully-charged battery (a battery that has been charged for at least one hour with the supplied AC battery charger/adapter) provides power for up to 150 frames; however, fewer images can be taken at low temperatures.

Battery charging is inhibited when the internal battery temperature is above 120˚ F (50˚ C). The camera back will continue to operate for as long as the battery charge is sufficient. You will not be able to power the camera back until the internal battery temperature drops below this limit.

IMPORTANT: Do not attempt to remove the battery; it is not a customer service-able part.

AC Battery Charger/Adapter



CAUTION: Observe all cautions regarding this unit included in “AC Battery Charger/Adapter — Important Warnings” at the front of this manual.

You can operate the camera back while connected to the supplied AC battery charger/adapter, or you can recharge the battery with the adapter and then use the camera back in the field without the adapter. The adapter will run the camera back continuously while it is charging the battery.

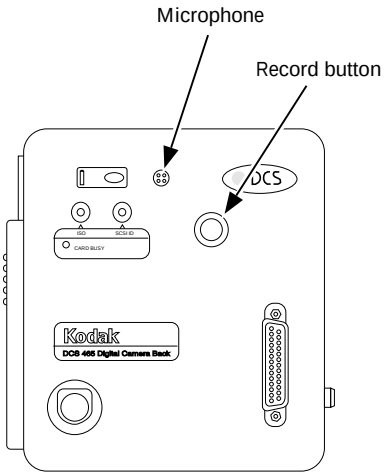
The adapter is a universal unit, with a range of 95–250 volts, 47–63 Hz, without a switch.

If you are using the camera back in an environment in which a power outlet is available, for example in a studio or when connected to a computer, we recommend that you operate the camera back while connected to the AC battery charger/adapter. You can leave the camera back continuously connected to the adapter even when not in use; once the battery is fully charged the adapter switches automatically to a slow trickle charge.

If you are beginning with a dead battery (you notice unusual random characters on the camera back LCD), follow special charging instructions in chapters 4 (Macintosh) or 5 (PC).

Recorded Sound

The DCS 465 Camera Back can record sound via a built-in microphone positioned in the camera back. This feature, implemented with a goal of simplicity and ease of use, allows you to record audio information about images or other subjects.



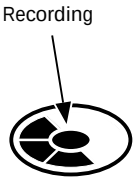
The feature is intended as an annotation system that records sound at “radio quality” — 8-bits, 11 kilohertz, monaural. Recorded sound is saved as a “.WAV” file on the PCMCIA card; WAV files are the Windows standard sound file format. Sound files are time- and date-stamped when written to the PCMCIA card.

As a sound segment is recorded, it is held briefly in dynamic random access memory (DRAM) in the camera back, and is then moved to the PCMCIA card where it is saved as a sound file. As a result, the card may contain an intermingling of image and sound files.

The camera back alone cannot play the recorded sound; instead, a computer is needed to access and play the sound files.

How to Record Sound

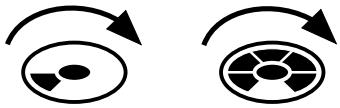
To record sound, ensure that a properly formatted PCMCIA card is installed in the camera back. Hold the camera back approximately six inches from your mouth, press and hold the record button, speak into the microphone, and when finished, release the record button. The center dot of the disk icon on the camera back LCD comes on when sound is being recorded.



If the shutter release is pressed while the record button is down, audio recording stops until the image has been recorded. If the record button is still down, the system begins to record sound again.

For simplicity there are no controls other than the record button; there is no volume control, and no way to set the recording level.

As sound is being recorded, segments of the disk icon bounce up and back, serving as a level meter (similar to the levels commonly displayed on audio equipment like tape decks). The bouncing segments provide feedback, a visual indication that sound is being recorded. The best quality recording occurs when 4-5 segments are on.



No sound Maximum

Sound files are loosely associated with the image taken before the sound was recorded. Do not record more than 99 sound files after each image. (More can be recorded — if there is space on the PCMCIA card — but only up to 99 can be played by the driver.)

Recording "Lengthy" Audio Segments

Approximately 25 seconds of uninterrupted sound can be recorded in a single file. If you press and hold the record button for over 25 seconds, a slightly different recording action will occur.

- The first 25 seconds of audio fills all available dynamic random access memory. Recording then stops for up to several seconds — even though the button is still depressed — while the data in memory are moved to a new file on the PCMCIA card. Then recording begins again for another 25 seconds, after which this new segment of sound is moved to a new sound file on the PCMCIA card, and so on. Each 25 second segment is stored on the card as a separate file.

- During the interruption between each 25 second segment, the red Card Busy LED on the camera back blinks, and the dot in the disk icon goes off. These indicate that data are being written to the card, and that sound is not being recorded.

Sound File Size

Roughly eight minutes of recorded sound is the equivalent of a single photographic image recorded by the camera back. You can completely fill a PCMCIA card with only sound files; the limit is the storage capacity of the PCMCIA card. An 80 MB card can store about 2 hours of audio if no images or other files are stored on the card.

When sound is not being recorded, you can refer to the disk icon on the camera back LCD; it indicates the combined proportion of the PCMCIA card filled with image and/or audio files.

Playing Sound Files

Recorded sound files can be played from the PCMCIA card with the software driver and your computer as explained in chapters 7 (Macintosh) or 8 (PC). No additional hardware is required to play the recorded file on a Macintosh computer; a sound board is required to play the recorded file on a PC.

Awake/Sleep State of the DCS 465 Camera Back

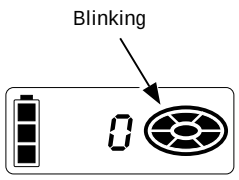
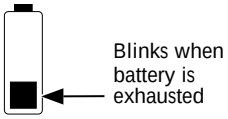
The awake/sleep state of the KODAK camera back depends on the mode of camera back operation as follows.

- If the DCS 465 Camera Back is operated without the AC battery charger/adapter and without being connected to a computer, the camera back is asleep until you wake it. (You wake the camera back by pressing the record button. On an electrically tripped camera you can also briefly tap the button on the end of your shutter release cable to wake the camera back.) Once awake, if there is no activity, the camera back automatically sleeps after about five seconds to preserve the battery. If the camera back is saving an image to a PCMCIA card, the camera back remains awake until the image is saved.
- The camera back is continuously awake when operated while connected to the AC battery charger/adapter; once the batteries are fully charged the adapter switches automatically to a slow trickle charge. If the camera back is saving an image to a PCMCIA card when the adapter is disconnected, the camera back remains awake until the image is saved.
- The camera back is also continuously awake when operated while connected to a computer that is on. If the camera back is saving an image to a PCMCIA card when the computer is turned off, the camera back remains awake until the image is saved.

Troubleshooting the DCS 465 Camera Back

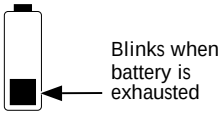
Trouble	Possible Cause	Suggested Solution
No power when using the battery.	The battery is discharged.	Charge the battery with the AC battery charger/adapter, or operate from the AC battery charger/adapter.
No power to charge the battery when using the AC battery charger/adapter.	The cable from the AC battery charger/adapter to the camera back is loose or not plugged into the camera back.	Make sure the cable is connected to the camera back and seated securely.
	The AC battery charger/adapter cable is loose or not plugged in at the wall.	Make sure the cable is connected to the wall and seated securely.
	There is no power at the power source.	Have the power source repaired and/or try another power source.
	The AC battery charger/adapter power cable is faulty.	Replace the cable.
	The AC battery charger/adapter is faulty.	Contact Kodak.

Trouble	Possible Cause	Suggested Solution
There are unexpected delays when reading from or writing to a PCMCIA card.	The battery is cold.	Warm the battery to room temperature.
	Condensation may be present in the camera back or PCMCIA card.	Condensation may be present if the camera back is moved from a relatively cold environment (like an air conditioned hotel room), into a warm, humid environment. We recommend that you allow sufficient time for the camera to normalize within the specified environmental ranges before operation.
	The data on the PCMCIA card is fragmented.	Run a utility program (not supplied with the camera system) that includes “defragger” capability, or move files from the card to your computer hard disk and reformat the card with the supplied software driver.
	The PCMCIA card is damaged or defective.	Try another card.

Trouble	Possible Cause	Suggested Solution
While using an electronically tripped camera, pressing the camera shutter release button does not release the shutter. Or, while using a mechanically tripped camera, releasing the shutter does not record an image.	You are not connected to a computer and there is no PCMCIA card in place in the camera system.	Insert a PCMCIA card or operate the camera system while connected to a computer with the driver image window opened.
	The camera back is asleep.	Wake the camera back by pressing the record button, or operate with the AC adapter or while connected to a computer.
	The PCMCIA card in the camera back is full. 	If connected to a computer, delete images or erase the PCMCIA card with the software driver. Use another PCMCIA card, if available.
	The PCMCIA card is not formatted; “E6” appears on the camera back LCD.	Format the PCMCIA card as described in chapters 4 (Macintosh) or 5 (PC) and try again.
	The battery is low. 	Recharge the battery, or operate from the AC battery charger/ adapter.
	The Camera back cannot take exposures of over three seconds.	Use a shorter exposure time.

Trouble	Possible Cause	Suggested Solution
Two characters, an “E” followed by a single digit (for example “E2”), appear on the camera back LCD. 	An error occurred on the PCMCIA card or in DRAM.	For the problems below, remove and reinsert the PCMCIA card and try again. If the problem continues, do a "sleep/awake" sequence: let the camera back sleep (disconnect the AC adapter from the camera back, shut down the computer if connected, and disconnect the camera back from the computer), reconnect and try again. If you continue to have problems format the PCMCIA card with the Format Disk button on the driver Control Panel (this will erase all images and sound files from the card). If the problem persist, contact Kodak; report the number of the error condition. E2 - failure of the PCMCIA card to start. E3 - failure when attempting to read the PCMCIA card. E4 - failure when attempting to write to the PCMCIA card. E5 - defective card, a non-ATA card, or a card that does not work. (Refer to the Read Me on the driver diskette for a list of supported cards.) E6 - unformatted PCMCIA card. E7 - defective card, a non-ATA card, or a card that does not work. (Refer to the Read Me on the driver diskette for a list of supported cards.)

Trouble	Possible Cause	Suggested Solution
You are losing images from the PCMCIA card.	An error occurred on the card.	Do a “sleep/awake” sequence: let the camera back sleep (disconnect the AC adapter from the camera back, shut down the computer if connected, and disconnect the camera back from the computer), reconnect and try again. If you continue to have problems, reformat the PCMCIA card with the Format Disk button on the Control Panel of the software driver. (This will erase all existing images from the card.) If the problem persists, contact Kodak.
Image data on the PCMCIA card have become corrupted; you are unable to access the image data.	You may be using an improper SCSI cable to connect the camera back to your computer.	Use only the supplied SCSI cables (or other cables as specified in chapters 4 — Macintosh) to attach the camera or other peripherals to the computer.
	Your SCSI chain is not terminated properly.	Ensure that the SCSI chain is terminated properly as described in chapters 4 (Macintosh) or 5 (PC).
	The files have become corrupted for an unknown reason.	If you have access to a computer with a PCMCIA card reader and disk utility software, you may be able to recover image and sound files with that utility software. If that computer system is unavailable or that action is unsuccessful, you may need to format the disk with the camera back, an operation which will erase all of your data on the card.

Trouble	Possible Cause	Suggested Solution
The camera back acts erratically, unusual or unexpected characters appear on the camera back LCD, or the LCD flickers unexpectedly.	The battery in the camera back is low or dead.  	Recharge the battery in the camera back, following special charging instructions in chapters 4 (Macintosh) or 5 (PC).
	The firmware in the camera has become corrupted.	Update camera firmware, as described in chapters 10 (Macintosh) or 11 (PC).
You are experiencing erratic camera behavior or unusual characters appear on the camera back LCD. You know the battery is charged.	The firmware in the camera has become corrupted.	Update camera firmware as described in chapters 10 (Macintosh) or 11 (PC).
The camera is stuck in one mode for unknown reasons.	An unexplained event may have occurred.	Update camera firmware as described in chapters 10 (Macintosh) or 11 (PC).
The camera back is warm when connected to the AC battery charger/adapter.	A warm temperature is normal.	Continue to operate the camera back normally.
Pushing the cable release on a mechanically tripped camera does not release the shutter.	The throw on your cable release is too short.	Use a cable release (not supplied) that has a throw of at least 5/8-inch, in order to trip the shutter. (The throw is the distance the pin extends from the end of the cable release when you fully depress the cable release button.)
	The shutter release plunger has been partially depressed for over three seconds.	Fully depress the plunger for three seconds or less to capture an image.

Cleaning the Imager and Cleaning/ Replacing the KG5 Filter Glass

> **CAUTION:** In the following steps you will expose the imager to the environment. Because the imager is sensitive to static discharge, you must observe the static discharge control measures described below.
>
> As you complete these steps, be certain that you do not touch the inside of the camera back (except as instructed).

Cleaning the Imager

The imager is the component of the DCS 465 Camera Back that records light when you take a picture. Even though it is located inside the camera back, it is still possible for the imager to become dirty.

The directions in this section describe how to determine if the imager needs cleaning, and how to clean the imager.

Determining if the Imager is Dirty

There are two ways to determine whether the imager needs cleaning:

- You can take a test picture and look at the image for imperfections that indicate dirt on the imager.
- You can visually inspect the imager for dirt.

Both techniques are described below.

Technique 1: Examine a Test Image

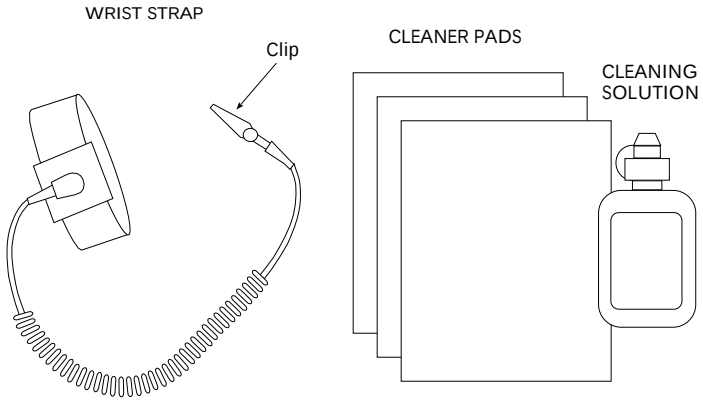
1. Set up the DCS 465 Camera Back to operate while connected to a computer.
2. Set the lens aperture to its highest f number, to provide for maximum depth of field.
3. Take a photograph of a plain white object like a clean, white wall.
4. Examine the image on the computer monitor; imperfections in the image, such as dark clusters or streaks, may indicate a dirty imager.

Technique 2: Visually Inspect the Imager

1. If the DCS 465 Camera Back is connected to your computer, disconnect it now as described earlier in this manual.
2. If the AC battery charger/adapter is connected, disconnect it from the camera back.
3. Lay the DCS 465 Camera Back on its back (the side with the labels and buttons) on a flat, steady surface.
4. Locate the cleaning materials supplied with the DCS 465 Camera Back. Included are an electrostatic discharge (ESD) wrist strap, low-

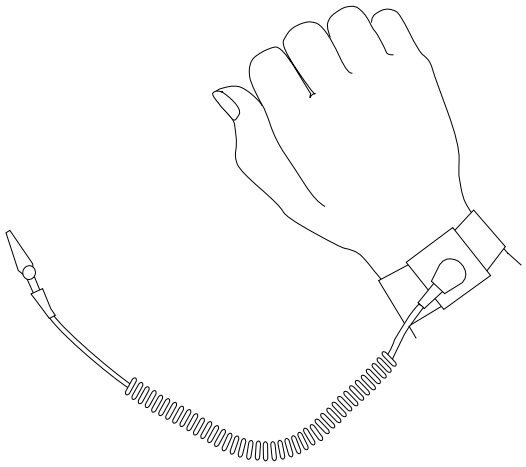
lint web cleaner pads, and a cleaning solution. The wrist strap is used to provide protection against damaging electronic components of the camera back.

IMPORTANT: Use only the cleaning materials provided with the DCS 465 Camera Back.

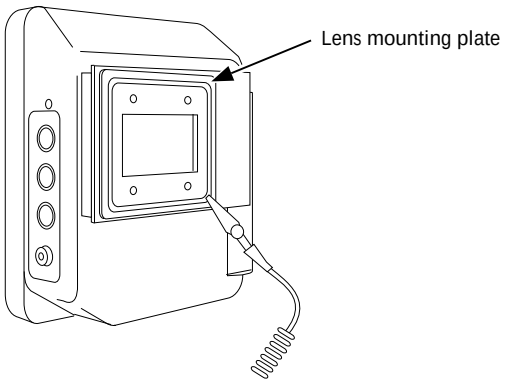


5. Assemble the electrostatic discharge (ESD) wrist strap (if assembly is necessary). The wrist strap protects electronic components of the camera back from static damage.

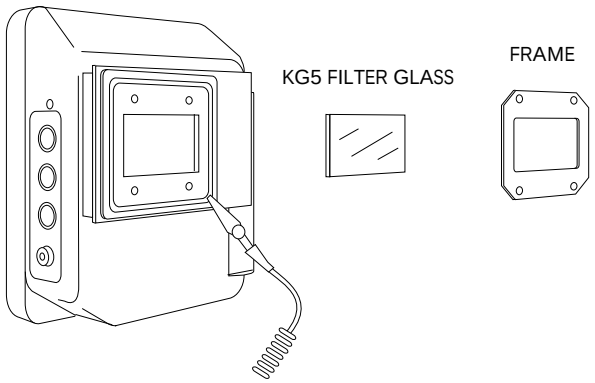
6. Attach the strap to your hand.



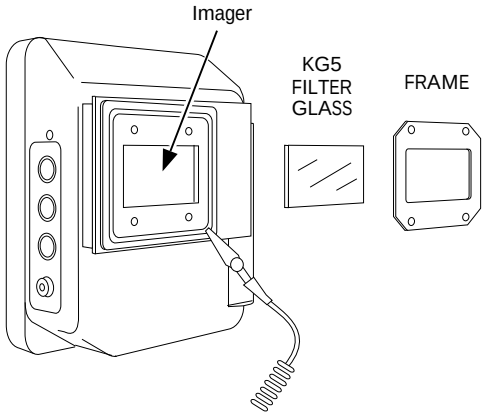
7. Attach the clip of the ESD wrist strap cable to a corner of the camera mounting plate as shown below; you and the camera back are now at the same potential.



8. Remove the frame that holds the KG5 filter glass by removing the four screws that hold the frame in place.



9. Carefully lift the KG5 filter glass from the camera back.
10. Note that the imager is visible through the lens mounting plate.



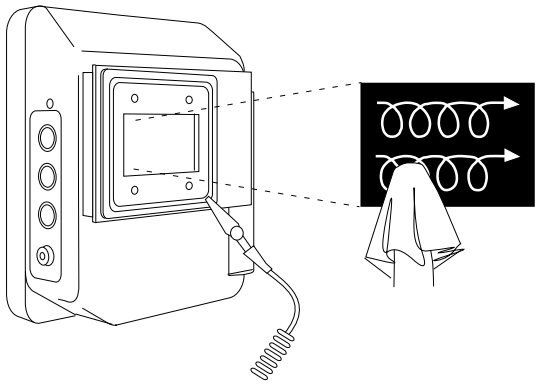
11. Hold the camera back so that light reflects off the imager; visually inspect the imager for grease, fingerprints, lint, or other dirt.
12. If the imager is clean, continue at “Cleaning the Filter Glass;” however, if the imager is dirty, clean it using the following steps.

Cleaning a Dirty Imager

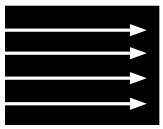
Wiping the Imager

1. Examine the imager visually. If there is lint on the imager (but not grease, fingerprints, or other dirt), avoid touching the imager and continue at step 9; otherwise continue with the next step.
2. Dampen one corner of the web cleaning pad sparingly with the cleaning solution.
3. Wrap the damp corner of the cleaner pad over the forefinger of one hand.
4. Hold the camera back firmly in place on the flat surface with your other hand.

5. Gently scrub the imager with the damp corner of the cleaner pad; use a circular motion, and move over the entire imager. This action should dislodge dirt and/or remove grease and fingerprints.



6. Wipe off residue on the imager surface by wiping repeatedly straight across the imager with a dry corner of the cleaning pad.



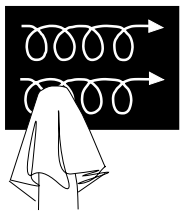
7. Gently lift the camera back, and examine the imager in the light to determine if it has been cleaned successfully.
8. If the imager is still dirty, repeat steps 2 through 7.
9. Use canned air to blow dust off the imager.
10. If there is still lint on the imager, repeat step 9.

Cleaning the Filter Glass

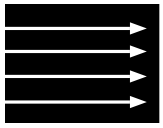
It is possible that the glass covering in the middle of the face of the camera back (the side with the imager), called the KG5 filter glass, may become dirty, or may break. This section describes how to clean that glass, and how to replace it if necessary. (Replacement glass is available as a spare part; refer to the appendix "Optional Equipment & Spare Parts List.")

Complete the steps below for each side of the filter glass.

1. Examine the filter glass. If there is lint on it (but not grease, fingerprints, or other dirt), avoid touching the glass, and continue at step 9 below; otherwise continue with the next step.
2. Dampen one corner of the web cleaning pad sparingly with the cleaning solution.
3. Wrap the damp corner of the cleaner pad over the forefinger of one hand.
4. Hold the filter glass firmly in place on a clean flat surface with your other hand.
5. Gently scrub the filter glass with the damp corner of the cleaner pad; use a circular motion, and move over the entire glass. This action should dislodge dirt and/or remove grease and fingerprints.



6. Wipe off residue on the filter glass by wiping repeatedly straight across the glass with a dry corner of the cleaning pad.



7. Carefully lift the filter glass by its edge, and examine it in the light to determine if it has been cleaned successfully.
8. If it is still dirty, repeat steps 2 through 7.
9. Use canned air to blow dust off the imager.
10. If there is still lint on the filter glass, repeat step 9.

Replacing the Filter Glass and Frame

1. Carefully place the KG5 filter glass in the camera back; both sides are the same, either side can be facing up.
2. Position the filter glass frame on the camera back.
3. Replace the four screws that hold the frame in place.
4. Remove the ESD wrist strap from the camera back and from your wrist.

The camera back is now ready for use.

Calibration (CAL) Files

In order to use any images taken with your DCS 465 Camera Back, a "calibration" (CAL) file designed for your particular camera back must be present on your computer hard disk. Instructions in chapters 4 (Macintosh) or 5 (PC) describe how to install that CAL file. If several different camera backs are used, the unique CAL file for each must be installed to access images from each camera back; this means you may have multiple CAL files on your hard disk.

CAL files are required in order to display thumbnails or previews of images in the driver image window, and are required in order to acquire an image. If the CAL file is not on your hard disk, or not in the proper place on your hard disk, you will see a message specifying the name of the missing CAL file when the driver attempts to display the image, and you will not be able to display or acquire the image.

When you copy or move images from a PCMCIA card to your hard disk with the COPY TO FOLDER or MOVE TO FOLDER commands, the CAL file(s) associated with the camera back(s) used to take the selected images are automatically copied to the folder with the images. The calibration files are needed subsequently to display and/or acquire the images. Therefore, do not delete any CAL files you find in folders with your images.

If you transport images to another computer (you may be distributing unacquired images to a different location at which the software driver is installed), be certain that you transport the CAL files found in the folder with the images. You will not be able to display those images, nor will you be able to acquire those images, unless their associated CAL files are available. Place the CAL files in the same folder as the images.

The calibration filename is your camera back serial number followed by a ".cal" suffix. For example, if the serial number of your camera back is 465-1006, the calibration filename is 465-1006.cal.

10

Reference — KODAK Driver for Adobe Photoshop (Macintosh) Software

This section of the manual includes detailed information about the Kodak Driver for Adobe Photoshop Software, including:

- The file format used for image archive files.
- The commands provided by the driver.
- The messages provided by the driver.
- Troubleshooting for the driver.

Introduction

The driver supplied by Kodak for use with Adobe Photoshop (Macintosh) software provides a variety of features that allow you to work with image and sound files on the DCS 465 Camera Back, and on the Macintosh computer hard disk. The driver allows you to:

- Acquire images from the DCS 465 Camera Back into Adobe Photoshop. This means that individual image files from your PCMCIA card are opened into separate windows in Adobe Photoshop. You can then edit the images using Photoshop features and save them to the Macintosh computer hard disk in a variety of file formats.
- Select one or more images in the image window, select all images, or select the last image from the DCS 465 Camera Back.
- Copy one or more selected images from the DCS 465 Camera Back PCMCIA card to a folder on the Macintosh computer hard disk.
- Copy one or more selected images from one archive folder to a new archive folder.
- Move one or more selected images from the DCS 465 Camera Back PCMCIA card to a new archive folder on the Macintosh computer hard disk or from one archive folder to a new archive folder. Unlike copying images, this action also deletes images from the DCS 465 Camera Back PCMCIA card, or archive folder after moving them to the new archive folder on the Macintosh computer hard disk.
- Delete selected images from the DCS 465 Camera Back PCMCIA card or delete images from an image archive folder on the Macintosh computer hard disk previously saved by this driver.
- Manage, and play, sound files recorded with the DCS 465 Camera Back.

Image Archive Folders

Images saved to the Macintosh computer hard disk by clicking COPY TO FOLDER or MOVE TO FOLDER from within the Photoshop driver supplied by Kodak can be read only with the Photoshop driver. One archive file on the Macintosh computer hard disk is created for each image and for each sound file archived to the computer hard disk. In addition to image data, an archive file includes a thumbnail for its image, and all data from its "INFO" box.

Color and monochrome images in these Macintosh computer archive files are composed of uninterpolated data; they have not been "acquired" into Photoshop. This means they contain the 6 megabytes (MB) of data generated from the array in the camera back and stored on the DCS 465 Camera Back PCMCIA Card. If you use the Photoshop driver to interpolate a single color image by acquiring it into Photoshop, the size of the single image file when saved in Photoshop format will be approximately 18 MB. Each acquired monochrome image saved in Photoshop format is 6 megabytes.

IMPORTANT: Do not open image archive files (files that you create by copying or moving images to the Macintosh hard disk) with Photoshop or other image software and then resave the data with the same filename. The image files you copied or moved contain several sections — one section with a TIFF version of the thumbnail, and then another section with the image data. When you open the file with Photoshop, only the TIFF thumbnail is opened, and if saved, only the thumbnail is saved — not the image data. For this reason, you should only open these files from within the driver using the CHANGE FOLDER button as described later in this chapter; this will ensure that you obtain the image data as well as the thumbnail.

Commands

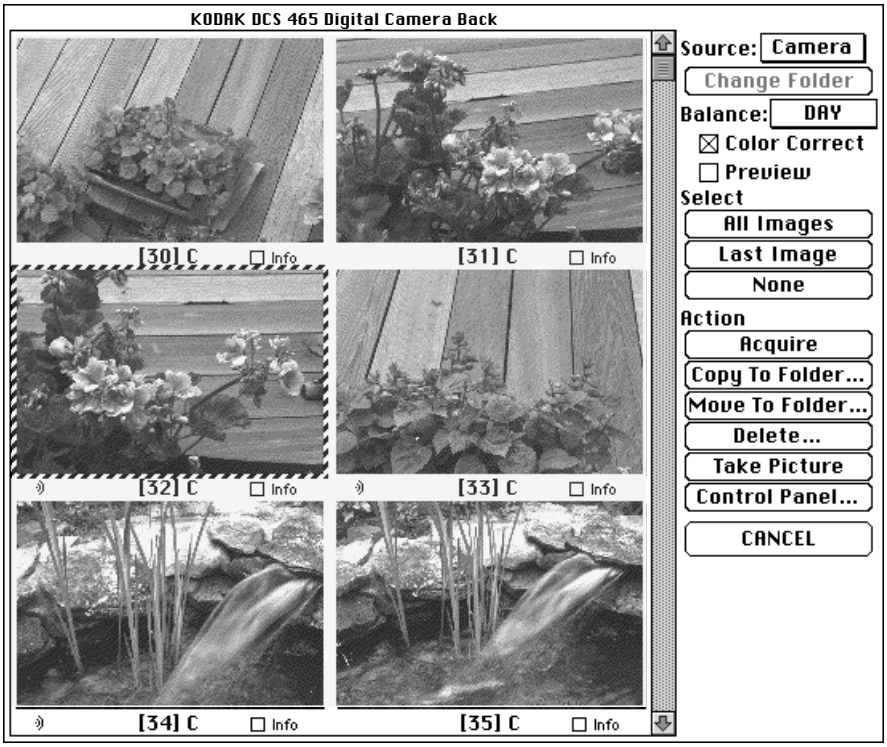
The driver provides a variety of features that allow you to work with image and sound files on the DCS 465 Camera Back PCMCIA card and on the Macintosh hard disk. The driver allows you to return from a photographic shoot, rapidly view the images, and transfer selected images to the Macintosh hard disk for archival purposes or for later retrieval into Photoshop. You can then delete some or all of the images on the camera back PCMCIA card in preparation for making additional images. Sound files can be played through the driver or saved to your Macintosh hard disk. These features are briefly described in this chapter.

To use these features, you must first install the driver by following the series of onetime steps described in chapter 4. Then each time you want to use the driver, you run Photoshop, and choose KODAK DCS 465 from the ACQUIRE submenu of the Photoshop FILE menu.

When you choose KODAK DCS 465, you will see the following driver image window on your Macintosh computer monitor.

The first time you choose this driver, a file named DCS 465 PREFERENCES is created in your System Folder. The settings you chose while in the driver are automatically maintained in that file from session to session.

NOTE: If you are using a camera back without a PCMCIA card, and there is an image in the camera back, you will only see that single image in the window. As each new image is made, it replaces the single image in the camera back and in this window.



The driver image window displays thumbnails, either from images on the DCS 465 Camera Back PCMCIA card, or from image archive files previously saved in a folder on the Macintosh computer hard disk by this driver.

Thumbnails appear in the driver image window in the same logical order that images appear on the DCS 465 Camera Back PCMCIA card. Opening an archive folder opens all archive files in the same folder.

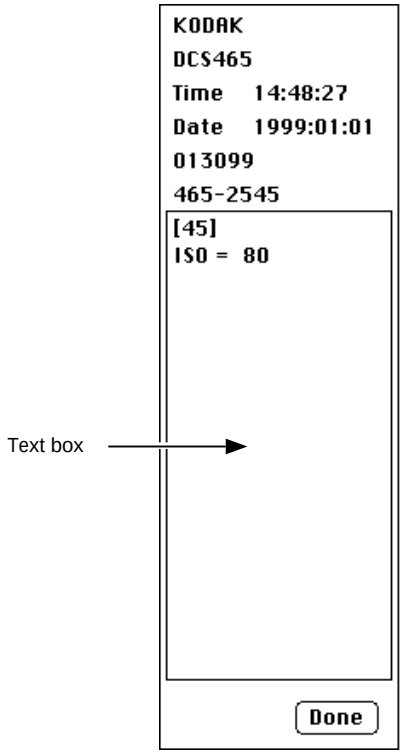
You can scroll through the images by moving the vertical scroll box or scroll arrows on the window, or by pressing the Page Up, Page Down, Home, or End keys on the Macintosh computer keyboard. Depending on the size of your monitor, you will see two or more thumbnails on each row, and two or more rows of thumbnails.

When working with images from a folder from the Macintosh computer hard disk instead of images from the PCMCIA card, the folder name appears at the top of the image window.

Two-digit image numbers appear beneath each image. A “C” after the image number — if it appears — indicates a color image.

If you click the small square “INFO” box beneath the lower right corner of an image, the information box, appears on the screen. To close the information box, click on its DONE button or elsewhere on the driver image window (except in the text area of the information box). The data displayed includes, from top to bottom: the time (displayed in 24-hour format) and date the image was made, the firmware version (a date) of the camera back when this image was produced, the camera back serial

number, an image number, and the ISO value used. (The firmware is the control programming in the camera back.) The data enclosed in a text box (beginning with the image number), can be copied, deleted, or edited as desired.



The time and date are maintained by the battery in the DCS 465 Camera Back. You update the date and time with the SET CLOCK choice described later in this chapter.

You can enter short descriptive material in the text box. Type the material and then use the mouse or arrow keys to move through text once entered. The text will be saved with the image (on the PCMCIA card), and will be saved with the image if it is moved or copied to an archive folder. The box can hold a maximum of 250 characters.

The text is not acquired when the image is acquired in Photoshop. However, you can copy or cut text from the text box for the image, and after acquiring the image in Photoshop, you can add the text to the image by pasting it into the dialog box that appears when you use the Photoshop Type Tool.

NOTES: If your computer monitor provides a software switch that allows you to center dialog boxes (for example SuperMac or E-Machines monitors), you may wish to turn this feature off so that an information box does not cover images on the screen.

SOURCE

Allows you to work with images from the DCS 465 Camera Back (choose CAMERA from the popup menu), and from all archive files in a folder on the Macintosh computer (choose FOLDER from the popup menu). When working with a Macintosh computer folder, the folder name appears at the top of the driver image window.

When you open the driver, the software looks first to the source in use at the end of your previous work session. If that source is not available (for example if you were using archive files and you have deleted or renamed the folder you were using), the software will look for the other SOURCE.

CHANGE FOLDER

Allows you to close the current archive folder (its contents are shown in the driver image window), and open another archive folder on the Macintosh computer hard disk. Click this button to display a standard Macintosh computer open file dialog box. This button is dimmed unless you select FOLDER as the SOURCE.

BALANCE

This option applies only to color images.

Select an option to correspond to the original lighting conditions under which you made the image. The option you select will be used for color correction by the driver when the image is acquired. The actions described in this section do not affect the images stored on the PCMCIA card or in archive folders; instead, these actions only affect the acquired image.

NOTE: If thumbnails or a preview are being viewed in color (you change to COLOR THUMBNAILS on the Control Panel), any changes you make in the BALANCE setting are immediately visible on the computer monitor.

The BALANCE popup menu provides the following choices.

DAY	Uses daylight color-correction values when acquiring the image.
TUNG	Uses tungsten color-correction values when acquiring the image.
FLUOR	Uses fluorescent color-correction values when acquiring the image.
FLASH	Uses flash color-correction values when acquiring the image.

CLICK

Allows you to provide color balancing data by clicking on a white or light gray area of a thumbnail or a preview. CLICK is always the preferred option. After choosing CLICK, the mouse pointer becomes a crosshair. Click on a white or light gray area of the image (thumbnail or preview) that is not overexposed. White balance values are calculated based on the point at which you clicked. The values are used for color balancing this and subsequent images you acquire until you change the values by choosing CLICK or another item from the BALANCE popup menu.

When using CLICK, we suggest that you view the image you want with PREVIEW, which displays a larger image and therefore more easily allows you to find a white area that is not overexposed. With the image you want displayed in preview mode, and with CLICK chosen from the BALANCE popup menu, move the crosshair cursor to a white or light gray area. Move the cursor to a spot on the image where each of the red (R), green (G), or blue (B) color values displayed below the image are as high as possible, but lower than 255. After you click, you view the result of the change on the preview image.

NOTES: When you click, you may see the message: "ONE OF THE COLORS IS SATURATED. PLEASE PICK ANOTHER POINT FOR BALANCING." As prompted, click on another point.

If you are in thumbnail mode the crosshair cursor changes back to a pointer after one click; however, if you are in preview mode the cursor stays as a crosshair. Working in preview mode allows you to repeatedly use this option without the need to choose CLICK from the BALANCE menu after each click.

If there is no white or light gray area in the image, take a photograph of a neutral gray or white card (for example KODAK Gray Cards, Publication No. R-27) under the same lighting conditions that existed when the image was taken. Click on the preview (or thumbnail) of this image to set color correction values for those lighting conditions; then acquire the desired image(s).

NONE — Uses a unity gain ("1" is used as the color correction value for red, green, and blue), for the color correction values when acquiring the image. This choice may be useful for images made under unusual lighting conditions when the other choices do not provide the desired results.

COLOR CORRECT

This option affects only color images.

Enhances the color in many images when you acquire the image. (When "on" an X appears in the check box to the left of this option.) In the rare case that the acquired image quality is unsatisfactory, return to the driver, turn this option off and acquire the image again; no color correction will be applied. The suggested value is "on."

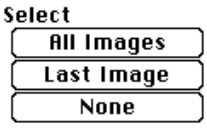
PREVIEW

Presents a single, enlarged version of the image — in color on a color monitor if the image is color — in the driver image window. You can scroll through images while in preview mode. Data displayed below the preview image indicate the image number, the current X and Y pixel location of the crosshair cursor on the preview image, and the red (R), green (G), and blue (B) values at the current cursor location.

(Refer to "CLICK" earlier in this chapter for an explanation of the use of PREVIEW with that feature.)

SELECT

Highlights images. (A narrow border surrounds highlighted images.) The buttons are useful for selecting images to delete, or to copy or move to the Macintosh computer hard disk.



IMPORTANT: SELECT chooses images from the DCS 465 Camera Back PCMCIA card or archive folder, not just thumbnails in the driver image window. For example, suppose you click on LAST IMAGE and then click on DELETE. The action does not merely delete the last image from computer memory, but in addition, these actions will delete the last image from the source (CAMERA or archive folder).

The three select choices work with images not currently visible in the image window. For example, clicking on ALL IMAGES selects thumbnails of *all* images, not only those visible in the image window; if you scroll the image window after clicking ALL IMAGES, you will see that all images are selected.

You can also select a single image by clicking on it. You can select multiple images by clicking on one image and then adding (or subtracting) from the selection by shift-clicking on other images (hold down the Shift key while you click on additional images).

Select choices are dimmed when PREVIEW is on, and also when there are no images on the PCMCIA card.

ALL IMAGES

Highlights all images. This choice is dimmed when there are no images available.

LAST IMAGE

Highlights the last image. This choice is dimmed when there are no images available.

NONE

Click on this button to deselect all highlighted images.

ACTION

Provides the following capabilities.

ACQUIRE

Allows you to acquire an image into Adobe Photoshop.

You only acquire image data. You do not acquire the thumbnail, or data from the INFO box. However, you can copy or cut text from the text box for the image, and after acquiring the image in Photoshop, you can add the text to the image by pasting it into the dialog box that appears when you use the Photoshop Type Tool.

NOTES: You can also double-click on the thumbnail image (not the preview image) as an alternate to the two-step process of selecting one image and then

clicking the ACQUIRE button. Images can be acquired while in preview or thumbnail mode.

If you are using Adobe Photoshop version 2.5 or later, you can select more than one image (by shift-clicking) before clicking ACQUIRE; each image will open into a separate Photoshop window.

The ACQUIRE button is dimmed until you select an image(s) or go to preview mode.

COPY TO FOLDER...

Copies highlighted images and associated sound files if any, whether currently visible in the image window or not, to the Macintosh computer hard disk. Each image and sound file becomes a separate file on the computer hard disk. The SOURCE can be either CAMERA or FOLDER. A standard Macintosh computer save dialog box appears. You can save the files in an existing folder or you can create a new folder for the files from this dialog box. Image data, a thumbnail, and all data from the "INFO" box are saved for each image.

NOTES: The COPY TO FOLDER button is dimmed until you select an image(s).

Do not take a new picture while an image(s) is being copied to a folder.

MOVE TO FOLDER...

Performs the same function as COPY TO FOLDER, but in addition deletes the highlighted images and associated sound files if any (whether currently visible in the image window or not), from their source — a PCMCIA card

or an archive folder on the Macintosh computer hard disk. A dialog box provides you with the option of deleting the images.

NOTES: The MOVE TO FOLDER button is dimmed until you select an image(s).

Do not take a new picture while an image(s) is being moved to a folder.

DELETE...

Deletes highlighted images (whether currently visible in the driver image window or not), from their source — either the PCMCIA card, or the Macintosh computer archive folder. A dialog box warns you that images will be deleted.

NOTE: The driver DELETE button is dimmed until you select an image(s).

TAKE PICTURE

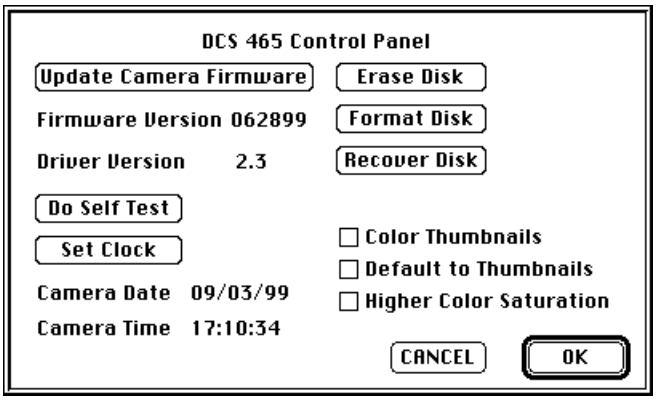
Issues a command that causes an electrically tripped camera to take a picture. To take a picture with this button the DCS 465 Camera Back must be connected to the Macintosh computer, the SOURCE must be CAMERA (the TAKE PICTURE button is dimmed when the source is FOLDER), and your camera must be connected to the camera back. Additionally, if you are operating without a power winder, you must wind the film winder on your camera before clicking TAKE PICTURE.

NOTE: You will not be able to take a picture while the camera back is accessing a PCMCIA card or while an Info box is open for an image.

CONTROL PANEL

Displays the following dialog box.

NOTE: If the SOURCE is FOLDER, the items in the box below related to the camera back or PCMCIA card (such as UPDATE CAMERA FIRMWARE or ERASE DISK), are not in effect and are therefore dimmed or do not appear.



UPDATE CAMERA FIRMWARE Select this choice to update the firmware in the camera back, the nonvolatile memory containing the control programming for the camera back. The firmware controls most of the features of the camera back.

When you click this button, the software driver looks for a "BIN" file (for example DCS465.BIN), which must be installed as described in chapter 4. The contents of the file are transferred into the firmware in the camera back. An error message is displayed if the required "BIN" file is not found.

This feature allows you to keep the firmware in the camera back up-to-date without sending the camera back to a

service center, since new versions of the file that you may obtain can be copied to the camera back with this command. It also allows you to replace the firmware in the camera back with the same version if the firmware in the camera back is acting erratically.

If you are working with a camera back that does not currently have a PCMCIA card installed, updating camera back firmware deletes the image in camera back DRAM if one is present.

After clicking this button, if you see a message asking you to use the AC battery charger/adapter and to wait for several minutes, follow these instructions and wait (to allow the battery to charge) before clicking this button again.

IMPORTANT: If you obtain an updated copy of the BIN file, keep only the most current version installed as described in chapter 4. This will ensure that the current BIN file is used should you update the camera back firmware.

FIRMWARE VERSION Displays the version of the firmware (control programming) in the camera back currently attached to the computer.

NOTE: This firmware version may be different from the firmware version displayed in an information box for an individual image. The version in the control panel is the version of the camera back currently connected to the computer. If a camera back with different firmware was used to produce an image, then a different firmware version will appear in the information box for that image.

DRIVER VERSION Displays the version of the software driver currently in use.

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DO SELF TEST Click this button to perform a diagnostic self-test of the DCS 465 Camera Back. Messages inform you of the outcome of the self-test. These data can be helpful for field debugging before you call Kodak with a problem.

SET CLOCK Click this button to set the date and time in the DCS 465 Camera Back. The date and time (in 24-hour format) are maintained in the camera back by the battery. When you click this button, the date and time are automatically retrieved from the Macintosh computer system clock and copied to the DCS 465 Camera Back.

Each image is date and time-stamped when made. These data are shown when you display the information box for the thumbnail (or preview) of an image by clicking on the small square "INFO" box beneath the lower right corner of the thumbnail (or preview).

The date and time do not appear on the camera back LCD.

CAMERA DATE Displays the date that is currently stored in the camera back; this date becomes part of the date and time-stamp saved with an image and is displayed for each image in the image information box. If the control panel is not displaying the date "today," make sure that the Macintosh system clock is accurate and then click on the SET CLOCK button to update this date from the system clock.

CAMERA TIME Displays the time that is currently stored in the camera back; this time becomes part of the date and time-stamp saved with an image and is displayed for each image in the image information box. If this is not displaying the current time, make sure that the Macintosh system clock is accurate and

. . . . . .

then click on the SET CLOCK button to update this time from the system clock.

ERASE DISK — Select this choice to erase the PCMCIA card in the camera back. This is the same as selecting all images from the image window and deleting them by clicking the driver DELETE button.

FORMAT DISK — Click this button to format the PCMCIA card in the camera back. This action is similar to formatting a floppy diskette or hard disk on your computer system. Existing images on the card are permanently erased and cannot be recovered.

If you are having unexplainable problems with the PCMCIA card (perhaps you are losing images, or you have been seeing an "E" followed by a single digit, for example "E2," on the camera back LCD), use this feature to reformat the PCMCIA card and try again.

RECOVER DISK — Click this button to recover images that have been deleted from a PCMCIA card in the camera back. The images you recover may have been previously deleted with:

- The DELETE button in the software driver image window.
- The ERASE DISK button on the CONTROL PANEL of the software driver.

You cannot use this option to recover the images that were deleted when you formatted the card with the FORMAT DISK choice on the Control Panel.

When you click the RECOVER DISK button, every image location on the card is examined. The most recent image that was in each location is recovered.

The following examples explain the action of this button.

Example 1. Suppose that you have a camera back with a PCMCIA card capable of storing 26 images, and that you have taken ten pictures and then deleted one. If you recover the PCMCIA card, you will have all ten images — the original nine images will still be there, and you will have recovered the tenth image.

Example 2. Suppose that you have a camera back with a PCMCIA card capable of storing 26 images, and that you have taken ten pictures, have deleted one, and taken another picture. In this case, the newest picture overwrites the deleted image. If you recover the hard disk, you will obtain 10 images, nine original images, plus the latest picture you have taken. The picture you deleted that was overwritten with a new image cannot be recovered.

Example 3. Suppose that you have filled the PCMCIA card with images, and erased all images. If you recover the disk with this button before you take any additional pictures you will have recovered all of the images you erased.

Example 4. Suppose you have a PCMCIA card capable of holding 26 images. Over time you have taken pictures, erased the disk, taken more pictures, deleted some, taken additional pictures, and so on — never having more than 20 images on the PCMCIA card. As you take new pictures while there are still active images on the PCMCIA card, the new images are written into an empty location on the PCMCIA card; deleted images that are overwritten become unrecoverable. Suppose you now delete all images and take three new pictures; the three new images will overwrite three images on the PCMCIA card. (The exact location of the overwritten

images can not be predetermined.) If you recover the PCMCIA card, you will recover 20 images. The three new images will be there plus 17 of the most recent 20 images.

COLOR THUMBNAILS Click this feature on (an X appears in the check box to the left of this option when on), to display thumbnails in color.

DEFAULT TO THUMBNAILS Displays thumbnails each time the driver is accessed, instead of using the previous display setting. When "on," if you exit from the driver while in PREVIEW mode, the next time you enter the driver, you will be displaying thumbnails instead of a preview image. This can be an advantage since thumbnails appear more quickly than a preview.

HIGHER COLOR SATURATION When on (an X appears in the check box to the left of this option), a color saturation of 100% is applied; when off a color saturation of 85% is applied.

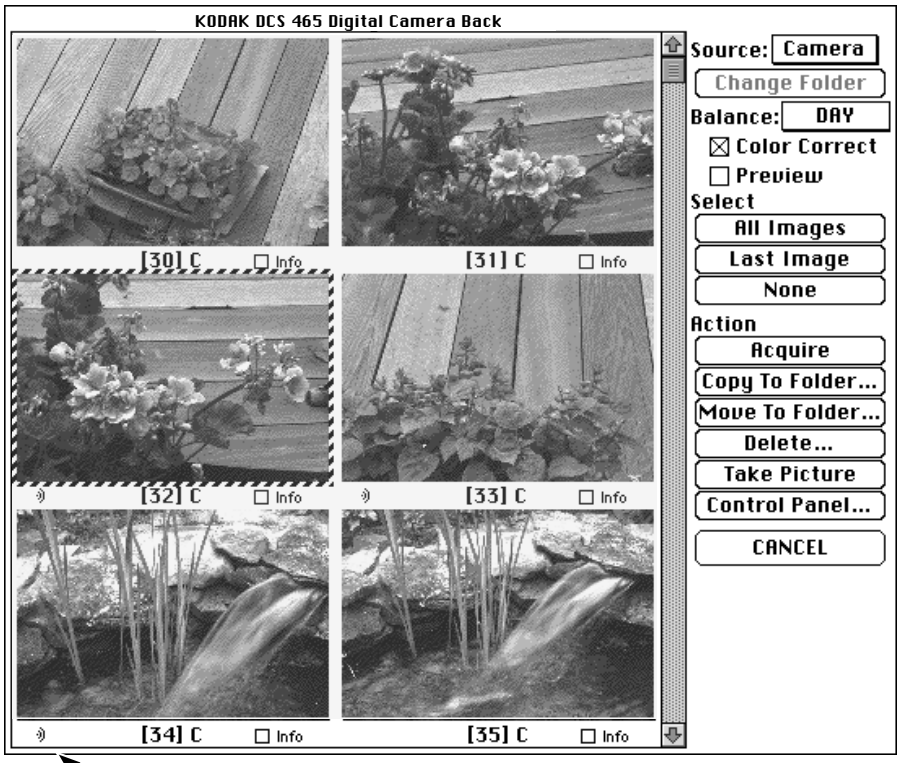
CANCEL Exits from the dialog box, canceling changes you may have made to the COLOR THUMBNAILS and DEFAULT TO THUMBNAILS choices. Alternately, press the Escape key to exit from the dialog box and cancel changes.

OK Exits from the dialog box. Alternately, press the Return key to exit from the dialog box and save changes.

Saving Sound Files to Your Computer Hard Disk

Once in the driver, a sound file recorded with the camera back appears as a small icon below the lower left hand corner of an image thumbnail, as shown on the next page. When the image is copied or moved to a folder, the sound file(s) associated with the image are also copied or moved, with each separate recording becoming a separate file on the computer hard disk. Up to 99 sound files can be recorded between two images.

When you click on the icon, if a single sound file was recorded, it is played through the Macintosh computer speaker. If multiple sound files were recorded at this point, clicking the sound icon displays a popup menu of each sound (named SOUND 1, SOUND 2, etc.). Select an item from the popup menu to play its sound.


KODAK DCS 465 Digital Camera Back
[30] C
Info
[31] C
Info
[32] C
Info
[33] C
Info
[34] C
Info
[35] C
Info
Source:
Camera
Change Folder
Balance:
DAY
Color Correct
Preview
Select
All Images
Last Image
None
Action
Acquire
Copy To Folder...
Move To Folder...
Delete...
Take Picture
Control Panel...
CANCEL
Sound file icon

Creating Monochrome Images with Your Color Camera Back

You can use your color camera back to create monochrome images. To do so, begin by exposing as you would for a color capture. There are then two methods you can use: convert to gray scale, and green channel.

Convert to gray scale. This is the preferred method, for it offers the best tonal rendition of the image, and should be used with color images that do not have high gain or noise levels. (High noise levels in images can be caused for a variety of reasons, for example by extended exposure times.) To use this method, click COLOR CORRECT "on" in the driver, and acquire the image normally. Then choose GRAY SCALE from the Photoshop MODE menu to discard the color information. You are left with the monochrome image.

Green channel. Use this method for color images that contain high noise levels. (High noise levels in images can be caused for a variety of reasons, for example by extended exposure times.) To use this method, click COLOR CORRECT "off" in the driver, set BALANCE to NONE in the driver, and then acquire the image. In Photoshop 2.5 and later, choose GREEN from the CHANNELS palette menu. In earlier versions of Photoshop choose SPLIT CHANNELS from the MODE menu and work only with the data from the green plane.

These actions produce a sharper image than reducing the other color levels to zero, since half of the pixels in the imager are green. As a result, the green plane has the most information when images are acquired in Photoshop.

Messages — KODAK Driver for Adobe Photoshop Software

You use Adobe Photoshop software on your Macintosh computer to acquire images from the DCS 465 Camera Back; to do so, you choose KODAK DCS 465 from the ACQUIRE submenu of the Photoshop FILE menu. The Photoshop software driver was designed by Kodak specifically for this purpose. That driver adds new messages to Photoshop. An explanation of those messages — listed in alphabetical order — follows.

NOTES: For an explanation of other Adobe Photoshop messages, refer to the instructions for that product.

A numeric code may print at the end of a message. Record it should you contact Kodak.

Message	Possible Cause	Suggested Solution
"A colon (:) is not allowed in a filename."	During a "Copy to Folder" or "Move to Folder" operation, you have entered a colon as part of a filename.	Use a filename without a colon.
"A Hardware Error occurred during the Self Test"	An unspecified hardware problem occurred.	Try again. If the problem continues, download the camera back firmware as described in this chapter, and try again. If you continue to have problems, contact Kodak.

Message	Possible Cause	Suggested Solution
"A new version of the driver is needed to use this image."	The driver you are using is outdated and will not work with the current version of the DCS 465 Camera Back.	Install a new driver and try again. Refer to Appendix A for additional information.
"A SCSI Error occurred. Please turn camera back off and then on again or check your external drive."	There may be one of a variety of problems, including loose or incorrect cables, improper SCSI configuration, and so on.	Shut down the computer and disconnect the camera back from the computer and the AC battery charger/adapter. Check all SCSI connections, cables, and termination. Reconnect your equipment, restart, and try again.
"Bad Informational data has been found. Continue and save the rest of the images?"	You are trying to copy or move image(s) to an archive folder and one or more of the images is a blank image.	Click OK to copy or move all selected non-blank images to the archive folder, or click Cancel to cancel the operation.
"Calibration file (465-nnnn.cal) is missing."	The driver does not find the calibration file for the camera back used to take this image	You will not be able to display the thumbnail or preview for this image, nor will you be able to acquire this image, unless you have the calibration file for the camera back used to take this image. Obtain that file and place it in the same location on your hard disk as the driver (plug-in) file.

Message	Possible Cause	Suggested Solution
“Camera back is busy. Try command again later.”	You have tried a command (for example Copy to Folder), and the DCS 465 Camera Back is still performing another operation.	Wait for a short time (for example wait until the red Card Busy light on the camera back stops blinking), and then try again.
“Cannot have same folder for acquiring from and saving to.”	While working with an archive folder (the Source is Folder), you have selected images, chosen “Copy to Folder” or “Move to Folder,” and tried to save the images into the same folder as the opened archive folder.	Try again, but this time create a new folder or use a folder other than the opened archive folder.

Message	Possible Cause	Suggested Solution
"Cannot Take Picture at this time. Battery is low."	You have clicked Take Picture while connected to an electrically tripped camera, but the battery is low.	If you are operating while the AC battery charger/adapter is connected, wait for a short time and try again. If you are operating without the AC adapter but are in an environment where power is available, attach the adapter, wait for a short time and try again. If neither a power source nor an adapter is available, you will not be able to complete this operation. We encourage you to charge the battery for at least one hour before any field operations. A charged battery provides approximately 100 images.
"Cannot Take Picture at this time. Camera is off." ► The camera back is busy. ► The camera can not be electrically tripped."	You have tried a command (for example Copy to Folder), and the DCS 465 Camera Back is still performing another operation.	Wait for a short time (for example wait until the red Card Busy light on the camera back stops blinking), and then try again.
	Mechanically tripped cameras can not be tripped with the Take Picture button.	Take pictures using your cable release.

Message	Possible Cause	Suggested Solution
"Cannot Take Picture at this time. Disk is full."	The PCMCIA card in the camera back is full when you clicked Take Picture.	If available, replace the current PCMCIA card with another that has space for additional images. Or make room on the PCMCIA card currently in the camera back by saving images from the card to your computer hard disk with the Move to Folder command (which includes the option of deleting images after they are moved), or by deleting unwanted images from the card with the software Delete button. Or remove the card and, while connected to the computer and the driver image window is opened, shoot single images which may be copied to a folder.
"Connect the Charger if it is not connected and wait 3 minutes, if the Charger is connected wait 3 minutes before Downloading Firmware."	The battery does not have enough power to update the camera back firmware.	Allow the camera back battery to charge for three minutes from the AC battery charger/adapter, and then click Update Camera Firmware again.

Message	Possible Cause	Suggested Solution
"Could not acquire this image because informational data was invalid."	You have tried to acquire a blank image, or an image that has been corrupted.	Blank images cannot be acquired. Work with another image. If it is not a blank image, you may not be able to acquire this image.
"Could not load calibration file (465-nnn.cal) for this image."	The driver does not find the calibration file for the camera back used to take this image	You will not be able to display the thumbnail or preview for this image, nor will you be able to acquire this image, unless you have the calibration file for the camera back used to take this image. Obtain that file and place it in the same location on your hard disk as the driver (plug-in) file.
"Could not play sound file."	The sound file may be corrupt.	If possible, record the sound again and repeat this operation.
"Could not save any images. All images had bad informational data."	You have tried to save a blank image to an archive folder, or an image that has been corrupted.	Blank images cannot be saved to archive folder. Work with another image. If it is not a blank image, you may not be able to acquire this image.
"Could not save because the disk is full. Approximately XXXX kilobytes disk space needed to save all images."	You are trying to save a file that is larger than the available space on the selected disk.	Select another disk if available, or delete files from the disk and try again. The message indicates the total kilobytes needed to save the file.

Message	Possible Cause	Suggested Solution
"Delete ALL images in Folder?"	You are about to delete all images in an archive folder on your computer hard disk (not only the images in the image window).	Click OK to delete all images in the archive folder, or Cancel to cancel the operation.
"Delete ALL images on External Drive?"	You are about to delete all images on a PCMCIA card (not only the images in the image window).	Click OK to delete all images on the PCMCIA card, or Cancel to cancel the operation.
"Delete ALL images on the camera back?"	You are about to delete all images on the DCS 465 Camera Back PCMCIA card (not only the images in the image window).	Click OK to delete all images on the PCMCIA card, or Cancel to cancel the operation.
"Disk has been recovered successfully."	You initiated a disk recovery of the PCMCIA card by clicking on Recover Disk in the Control Panel. It was completed successfully.	Click OK; no other action is required.
"Do you want to delete these images?"	After moving image(s) to an archive folder, the software driver asks you to confirm that you want the selected images to be deleted.	Click OK or Cancel as desired.

Message	Possible Cause	Suggested Solution
"Driver may not be compatible with this version of Photoshop™"	The driver and your version of Adobe Photoshop are incompatible.	Adobe Photoshop version 2.0 or higher is required. Upgrade if necessary.
"Erase Disk has completed successfully."	You initiated an Erase Disk operation in the Control Panel. It was completed successfully.	Click OK; no other action is required.
"Error with 'Copy to Folder' Folder."	A problem occurred while writing the file (for example, a problem with the hard disk).	Try again. Write the file to another disk if available.
"Error with Take Picture."	The SCSI cable is not connected properly.	Verify that the SCSI cable is connected properly between the computer and the DCS 465 Camera Back. If not, turn both off, reconnect the cable, and try again.

Message	Possible Cause	Suggested Solution
"Error reading from Source Archive folder."	An unusual condition is detected when reading from an archive folder on your computer hard disk.	You will not be able to access images from this file.
"Firmware download failed. Check SCSI bus."	There may be one of a variety of problems, including loose or incorrect cables, improper SCSI configuration, and so on.	Shut down the computer and disconnect the camera back from the computer and the AC battery charger/adapter. Check all SCSI connections and cables. Reconnect your equipment, restart, and try again.
	There is an unusual condition with the driver for Photoshop.	Choose the driver again from the Acquire submenu. If the problem recurs, shut down your Macintosh computer; restart the computer and Photoshop, and try the driver again. If the condition persists, delete the KODAK DCS 465 file from your computer hard disk, and install a new copy of the same file as described in "Installing the KODAK Driver . . ." in chapter 4.

Message	Possible Cause	Suggested Solution
"Firmware Update failed. Could not find firmware 'DCS465.BIN' file from Macintosh."	The "DCS465.BIN" file was not found in the same folder as the "KODAK DCS 465" file.	Place a copy of the "DCS465.BIN" file in the same folder as the "KODAK DCS 465" file. The required file may have an additional letter in the filename, such as DCS465C.BIN. The DCS465.BIN file was supplied by Kodak on the diskette labeled "KODAK Driver for ADOBE PHOTOSHOP Software for use with KODAK Professional DCS 465 Digital Camera Backs."
"Firmware Update failed. Could not load firmware 'DCS465.BIN' file from Macintosh."	There is an unusual condition with the driver for Photoshop.	Choose the driver again from the Acquire submenu. If the problem recurs, shut down your Macintosh computer; restart the computer and Photoshop, and try the driver again. If the condition persists, reinstall the driver files as described in "Installing the KODAK Driver . . ." in chapter 4.
"Firmware Update has completed successfully."	You initiated a camera back firmware update by clicking on Update Camera Firmware in the Control Panel. It was completed successfully.	Click OK; no other action is required.

Message	Possible Cause	Suggested Solution
"Format Disk? ALL Images will be lost and cannot be RECOVERED. This can take several minutes"	You have clicked the Format Disk button on the Control Panel to format a PCMCIA card.	Click OK to format the PCMCIA card currently in the camera back. This erases all images on the card — without the option of recovering them. Or click Cancel.
"Format has completed successfully."	You initiated PCMCIA card formatting by clicking on Format Disk in the Control Panel. It was completed successfully.	Click OK; no other action is required.
"Informational data not available for this image."	You have clicked on the "Info" box for a bad image.	Click OK. Work with another image.
"Internal Error XXX. Restart MACINTOSH computer and try driver again. Or replace driver from original disk."	There is an unusual condition with the driver for Photoshop.	Choose the driver again from the Acquire submenu. If the problem recurs, shut down your Macintosh computer; restart the computer and Photoshop, and try the driver again. If the condition persists, delete the KODAK DCS 465 file from your computer hard disk, and install a new copy of the same file as described in "Installing the KODAK Driver . . ." in chapter 4.

Message	Possible Cause	Suggested Solution
"Last folder used is invalid. Requesting new folder."	The folder you were using during your last work session has been deleted or renamed.	Choose a different folder from the Open dialog box.
	You have switched from Photoshop to the Finder and have changed the location of an opened file.	Choose a different file from the Open dialog box.
	You have a damaged hard disk on your computer.	Have the hard disk repaired.
"Modified text can not be saved to file because file is locked. All modified text will be lost."	You have typed text in the information box for an image in an archive file but the archive file is locked.	Unlock the file and try again.
"More than one image was selected. Only the first one will be acquired."	You are using a version of Photoshop before 2.5 and have selected more than one image and then clicked Acquire.	Click OK to acquire the first image of the selected thumbnails. Or click Cancel, select a single image, and then click Acquire. (With Photoshop 2.5 and above more than one image can be acquired in the same step.)

Message	Possible Cause	Suggested Solution
"Not enough memory. Try closing windows or increasing application memory size."	There is not enough memory to complete the operation.	If unneeded windows are opened, close them and try the operation again. Or quit Photoshop and increase its memory size. (Select Photoshop on the Finder. Choose Get Info from the File menu. Increase the memory size.) Restart Photoshop and try the operation again.
"One of the colors is saturated. Please pick another point for balancing."	After choosing Click from the Balance menu you have clicked the crosshair on an overexposed area of the thumbnail or preview.	Choose Click again from the Balance popup menu and then click on a white area that is not overexposed. (Refer to the explanation of Click earlier in this chapter; it describes using Preview with Click to avoid choosing an overexposed area.)
"Preferences file could not be saved."	The system disk is full, is write protected (for example on a SyQuest disk), or there is a problem with the system disk.	Create room on the system disk, remove write protection from the system disk, or have the system disk repaired.

Message	Possible Cause	Suggested Solution
Recover Disk complete but no images were found.	The PCMCIA card has been recovered successfully but there were no images on the card.	No action required. If there were images on the card, they cannot be recovered.
"Self test has completed successfully."	You initiated a self test by clicking on "Do Self Test" in the Control Panel. It was completed successfully.	Click OK; no other action is required.
"The Battery in the camera back is almost dead. Please connect the AC Adapter."	The battery needs charging.	If you are operating without the AC adapter but are in an environment where power is available, attach the adapter, wait for a short time and try again. If neither a power source nor an adapter is available, you will not be able to complete this operation. We encourage you to charge the battery before any field operations. A charged battery provides approximately 150 images.
"The camera back has been disconnected."	The DCS 465 Camera Back and the computer have been disconnected.	Turn off the computer, reconnect the cable, and try again.

Message	Possible Cause	Suggested Solution
"The camera back was not found. Try the following. ► Check all cables ► Check for SCSI ID conflict ► Check for a dead battery. ► Switch to an archive folder."	The SCSI cable is not connected properly.	Verify that the SCSI cable is connected properly between the computer and the DCS 465 Camera Back. If not, turn the computer off and disconnect the AC adapter, reconnect the cable, and try again.
	The DCS 465 Camera Back SCSI ID is set improperly.	Reset the DCS 465 Camera Back SCSI ID so that it is different from other devices connected to the computer. To do so, turn off the computer then other SCSI devices. Reset the DCS 465 Camera Back SCSI ID. Restart. (If your Macintosh computer has a CD-ROM drive, be certain that you avoid its number — often number 3.) *continued*

Message	Possible Cause	Suggested Solution
continued from previous page "The camera back was not found. Try the following. ► Check all cables ► Check for SCSI ID conflict ► Check for a dead battery. ► Switch to an archive folder."	You have connected the DCS 465 Camera back to a different computer (or to the same computer to which you previously connected an additional SCSI device), resulting in a SCSI ID conflict.	Reset the DCS 465 Camera Back SCSI ID so that it is different from other devices connected to the computer. To do so, turn off the computer. Set the DCS 465 Camera Back SCSI ID to a unique value. Restart.
	The battery in the camera back is dead.	Operate from the AC battery charger/adapter or charge the battery from the adapter and try again.
	You have deliberately chosen the driver when no camera was connected with the intention of working with images in an archive folder.	Click "Switch to Folder" and open an archive folder from your computer hard disk.
"The camera back was not found. Try the following. ► Check all cables ► Check for SCSI ID conflict ► Check for a dead battery.	Same as previous message.	Same as the previous message; however, this message does not present the option of switching to an archive folder.

Message	Possible Cause	Suggested Solution
"The PCMCIA disk in the camera back is NOT a DOS Disk. If you want to use this disk with the camera back press the Control Panel button and then the Format Disk button. FORMATTING WILL PERMANENTLY ERASE THE DISK."	The camera back requires that a PCMCIA card be DOS formatted.	Use the Format Disk button on the Control Panel of the driver image window to format the PCMCIA card. If a second PCMCIA card that is known to be DOS formatted is available, replace the current PCMCIA card with the second card.
"There is no Last Image and no Images on the DCS 465."	You are trying to acquire an image and there are no images on the hard disk — if present — or in DRAM if using a camera back without a hard disk.	Take a picture(s) and try again, or work with images from an archive folder.
"This driver is not compatible with the camera back. Please get a newer Driver."	The driver you are using is outdated and will not work with the current version of the DCS 465 Camera Back.	Install the newest driver and try again. Refer to the appendix "Updating Your Kodak Software Driver" for more information.
"This Driver is not compatible with this image. Please get a newer driver."	The driver you are using is outdated and will not work with the current image.	Install the newest driver and try again. Refer to the appendix "Updating Your Kodak Software Driver" for more information.
"This Driver will not work on a Macintosh with a 68000 processor."	The driver will not work on older Macintosh computers.	You will not be able to use the driver on this computer; run the driver on a supported computer. Refer to chapter 1 for additional information.

Message	Possible Cause	Suggested Solution
"This driver requires 32-Bit QuickDraw to operate."	You are working with a supported Macintosh computer but the 32-Bit QuickDraw file is missing.	Install or reinstall 32-Bit QuickDraw (not supplied with the camera back).
	The driver will not work on older Macintosh computers that do not have 32-Bit QuickDraw.	You will not be able to use the driver on this computer; run the driver on a different computer.

Troubleshooting — KODAK Driver for Adobe Photoshop Software

Trouble	Possible Cause	Suggested Solution
The Acquire command on the File menu is dimmed, meaning that you cannot access the KODAK DCS 465 camera back choice, or the KODAK DCS 465 camera back choice does not appear on the Acquire submenu.	The KODAK DCS 465 driver has not been installed, or has not been installed properly.	Quit Photoshop, install the KODAK DCS 465 driver as described in chapter 4, run Photoshop, and try again.
The Update Camera Firmware button is dimmed or missing when you want to use it.	The Source is not Camera.	Make sure the camera back is connected properly to the computer, change the Source to Camera and try again.
The time and/or date in the information box for an image(s) is incorrect.	The computer system clock from which the clock in the camera back was set, contained an incorrect time and/or date.	Reset the computer system clock. Connect the DCS 465 Camera Back to your computer, run the driver, and reset the clock in the camera back using the Set Clock choice on the Control Panel.
	The battery has been dead for an extended period (perhaps a month or more) without recharging.	Recharge the camera battery with the AC battery charger/adapter, and then reset the clock in the camera back using the Set Clock choice on the Control Panel.

Trouble	Possible Cause	Suggested Solution
You are unable to open the software driver when you choose its name from the Acquire submenu while the camera back is connected to the computer.	The firmware in the camera back has become corrupted.	Update camera back firmware as described earlier in this chapter.
You are experiencing erratic camera back behavior or unusual characters appear on the camera back liquid crystal display (LCD). You know the battery is charged.	The firmware in the camera back has become corrupted.	Update camera back firmware as described earlier in this chapter.
All acquired images have a consistent defect.	There is dirt or dust on the imager.	Clean the imager as described in chapter 9.
An undesirable color shift has occurred in saturated colors.	The image has been overexposed.	Underexpose for proper color saturation.

Trouble	Possible Cause	Suggested Solution
Acquired images have random defects, or there is other noise in the image.	You are using a SCSI cable longer than those supplied with the DCS 465 Camera Back.	Use only the supplied or specified cables.
	The exposure time is too long.	Avoid long exposures. Occasionally exposures of more than 1/2 second can produce noise in the image. (You cannot take exposures of more than three seconds.)
Images are consistently too light or too dark.	The gamma for your monitor is not calibrated properly.	Calibrate the gamma for your monitor as explained in the Adobe Photoshop manual.
The Macintosh computer crashes when the camera back is attached.	There is a SCSI ID conflict.	Reset the SCSI ID on the camera back as described in chapter 4. (If your Macintosh computer has a CD-ROM drive, be certain that you avoid its number — often number 3.)
The Macintosh computer crashes as the camera back is disconnected.	You have disconnected the camera back from the computer while it is on.	The correct procedure is to shut down the computer before disconnecting the camera back from the computer.

Trouble	Possible Cause	Suggested Solution
The Macintosh computer crashes or you lose files or folders from your Macintosh hard disk.	You are using System 7.0 or System 7.0.1 and are not using the System Tuner version 1.1.1 or higher.	Put the System Tuner version 1.1.1 or higher in your System Folder to ensure that you have the most current version of the operating system, or upgrade to System 7.1 or 7.5.
The battery has become exhausted while the camera back is connected to the Macintosh computer; the AC battery charger/adapter is not being used.	When the camera back is connected to a Macintosh computer that is on, the camera back will remain awake. This can exhaust the battery if it continues for a long period of time without recharging.	Recharge the battery in the camera back. We recommend that you operate the camera back from the AC battery charger/adapter when connected to a Macintosh computer.
While using an electrically tripped camera, you click the Take Picture button, but no picture is recorded.	The PCMCIA card in the camera back is full (the disk indicator is flashing).	Delete images from the PCMCIA card, or use a different card if available.
	The camera shutter has not been reset since the last exposure.	Reset camera shutter.

Trouble	Possible Cause	Suggested Solution
You clicked the camera shutter but no picture was recorded.	An Info box for an image is opened.	Close the Info box and try again.
	With a mechanically tripped camera, you are taking pictures in rapid succession and light from one image is distorting the previous image before the previous image has been written completely to the PCMCIA card.	Do not try to take a new picture until the previous image has been completely written to the PCMCIA card — that is, until the red card busy light on the camera back stops blinking.
When shift-clicking on images in the image window (you are trying to add or remove an image from the selection), every click is not recognized and does not select or deselect an image.	The Double-Click Speed for the mouse — in the Apple menu Control Panel(s) — is set at a low speed.	Choose Control Panel(s) from the Apple Menu, and choose the fastest Double-Click Speed for the Mouse.
		Allow more time between each of your mouse clicks.
The Delete and Move to Folder buttons are dimmed when the Source is Folder and you have images selected.	The archive folder is locked.	To delete images, you must first unlock the folder.
When the Source is Camera, the driver image window is showing "blank" images in addition to images you have taken with the camera back.	The PCMCIA card currently in the camera has been used in cameras other than the DCS 465; the driver for the DCS 465 cannot display or acquire images from some other cameras.	To display thumbnails and acquire images taken with some cameras other than the DCS 465, use the driver for that camera.

Trouble	Possible Cause	Suggested Solution
You have obtained and installed a new BIN file and clicked Update Camera Firmware in the Control Panel but the camera back firmware shows the old version number.	The new BIN file is in the wrong location.	Place the BIN file in the same location as the driver.
	You have more than one DCS 465 BIN file in the correct location on your hard disk.	Remove older BIN files from their current location on your hard disk, then update firmware again.
Acquired images are distorted.	With a mechanically tripped camera, you are taking pictures in rapid succession and light from one image is distorting the previous image before the previous image has been written completely to the PCMCIA card.	Do not try to take a new picture until the previous image has been completely written to the PCMCIA card — that is, until the red card busy light on the camera back stops blinking.
Colors in the acquired image are distorted.	The Higher Color Saturation setting may not be set properly for this image.	Change the Higher Color Saturation setting on the driver image window Control Panel. (If the setting is off, turn it on, and if it is on, turn it off.) Then try again.

11

Reference — KODAK Drivers for TWAIN-Compliant PC Applications

This section of the manual includes detailed information about the Kodak Drivers for TWAIN-compliant PC applications, including:

- The file format used for image archive files.
- The commands provided by the driver.
- The messages provided by the driver.
- Troubleshooting for the driver.

Introduction

The drivers supplied by Kodak for use with TWAIN-compliant PC applications provide a variety of features that allow you to work with image and sound files on the DCS 465 Camera Back, and on the PC hard disk. The drivers allow you to:

- Acquire images from the DCS 465 Camera Back into TWAIN-compliant PC applications. This means that individual image files from your PCMCIA card are opened into separate windows in your application. You can then edit the images using features of your application and save them to the PC hard disk in a variety of file formats.
- Select one or more images in the image window, select all images, or select the last image from the DCS 465 Camera Back.
- Copy one or more selected images from the DCS 465 Camera Back PCMCIA card to a folder called an archive folder on the PC hard disk.
- Copy one or more selected images from one archive folder to a new archive folder.
- Move one or more selected images from the DCS 465 Camera Back PCMCIA card to a new archive folder on the PC hard disk or from one archive folder to a new archive folder. Unlike copying images, this action also deletes images from the DCS 465 Camera Back PCMCIA card, or archive folder after moving them to the new archive folder on the PC hard disk.
- Delete selected images from the DCS 465 Camera Back PCMCIA card or delete images from an image archive folder on the PC hard disk previously saved by this driver.
- Manage, and play (if supported by your PC), sound files recorded with the DCS 465 Camera Back.

Image Archive Folders

Images saved to the PC hard disk by clicking COPY TO FOLDER or MOVE TO FOLDER from within the driver supplied by Kodak should be read only with that driver (see the "Important" paragraph below). One archive file on the PC hard disk is created for each image and for each sound file copied or moved to the computer hard disk. In addition to image data, an archive file includes a thumbnail for its image, and all data from its "INFO" box.

Color and monochrome images in these archive files are composed of uninterpolated data; they have not been "acquired" into your application. This means they contain the 6 megabytes (MB) of data generated from the array in the camera back and stored on the DCS 465 Camera Back PCMCIA card. If you use the driver to interpolate a single image by acquiring it into your TWAIN-compliant application, the size of the single image file when saved will vary from application to application, but may be 18 MB for a color image and 6 MB for a monochrome image.

IMPORTANT: Do not open image archive files (files that you create by copying/moving images to the PC hard disk) with image software and then resave the data with the same filename. The image files you copied/moved contain several sections — one section with a TIFF version of the thumbnail, and then another section with the image data. When you open the file, only the TIFF thumbnail is opened, and if saved, only the thumbnail is saved — not the image data. For this reason, you should only open these files from within the driver image window using the CHANGE FOLDER button as described later in this chapter; this will ensure that you obtain the image data as well as the thumbnail.

Commands

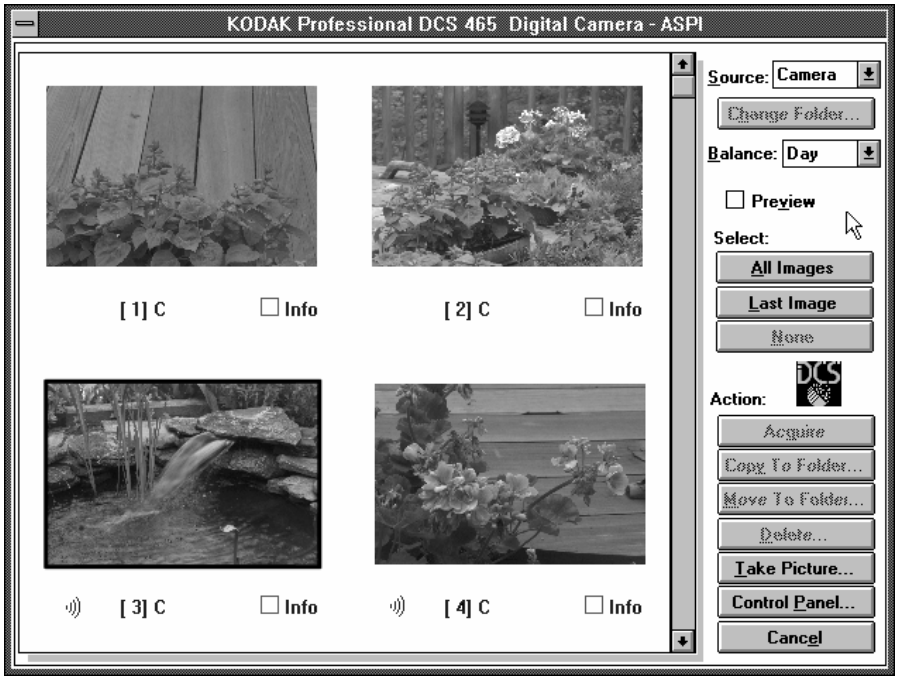
The driver provides a variety of features that allow you to work with image and sound files on the DCS 465 Camera Back PCMCIA card and on the PC hard disk. The driver allows you to return from a photographic shoot, rapidly view the images, and transfer selected images to the PC hard disk for archival purposes or for later retrieval into your TWAIN-compliant application. You can then delete some or all of the images on the camera back PCMCIA card in preparation for making additional images. Sound files can be played through the driver (if supported by your PC) and saved to your PC hard disk with their corresponding image. These features are briefly described in this chapter.

To use these features, you must first install the driver by following the series of onetime steps described in chapter 5. Then each time you want to use the driver, you run your TWAIN-compliant application and access the driver as described in chapter 8. When you do, you will see the following driver image window on your PC monitor.

As you work with the driver, the settings you choose are automatically maintained from session to session.

NOTES: If you are using a camera back without a PCMCIA card, and there is an image in the camera back, you will only see that single image in the driver image window. As each new image is made, it replaces the single image in the camera back and in this window.

You choose a command by clicking it with the mouse. Or you can use a keyboard shortcut; to do so, press and hold the Alt key, press the key for the underlined letter in the command (for example the “L” in Last Image), then release both keys.



The driver image window displays thumbnails, either from images on the DCS 465 Camera Back PCMCIA card, or from image archive files previously saved in a folder on the PC hard disk by this driver.

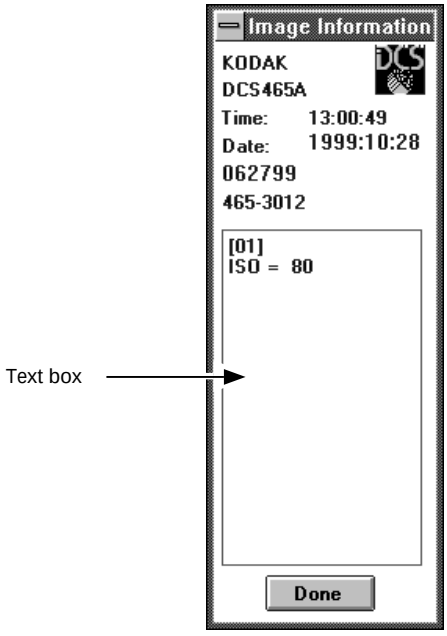
Thumbnails appear in the driver image window in the same logical order that images appear on the DCS 465 Camera Back PCMCIA card. Opening an archive folder opens all archive files in the same folder.

You can scroll through the images by moving the vertical scroll box or scroll arrows on the window, or by pressing the Page Up, Page Down, Home, or End keys on the computer keyboard. Depending on the size and configuration of your monitor, you will see two or more thumbnails on each row, and two or more rows of thumbnails.

When working with images from a folder from the PC hard disk instead of images from the PCMCIA card, the folder name appears at the top of the image window.

Two-digit image numbers appear beneath each image. A “C” after the image number — if it appears — indicates a color image.

If you click the small square “INFO” box beneath the lower right corner of an image, an information box appears on the screen. To close the information box, click its DONE button. The data displayed includes, from top to bottom: the time (displayed in 24-hour format) and date the image was made, the firmware version (a date) of the camera back when this image was produced, the camera back serial number, an image number, and the ISO. (The firmware is the control programming in the camera back.) The data enclosed in the box (beginning with the image number), can be copied, deleted, or edited as desired.



The time and date are maintained by the battery in the DCS 465 Camera Back. You update the date and time with the SET CLOCK choice described later in this chapter.

You can enter short descriptive material in the text box. Type the material and then use the mouse or arrow keys to move through text once entered. The text will be saved with the image (on the PCMCIA card), and will be saved with the image if it is moved or copied to an archive folder. The box can hold a maximum of 250 characters.

The text is not obtained when the image is acquired into your TWAIN-compliant PC application. However, you can copy or cut text from the text box for the image, and after acquiring the image, you may be able to paste the text onto the image if supported by the application.

NOTE: If your computer monitor provides a software switch that allows you to center dialog boxes, you may wish to turn this feature off so that an information box does not cover images on the screen.
You will not be able to take pictures while the Info box is opened for an image; close the box and then take the picture.

SOURCE

Allows you to work with images from the DCS 465 Camera Back (choose CAMERA from the popup menu), and from all archive files in a folder on the PC hard disk or on a PCMCIA card in a drive connected to your PC (choose FOLDER from the SOURCE menu). When working with a folder, the folder name appears at the top of the driver image window.

When you open the driver, the software looks first to the source in use at the end of your previous work session. If that source is not available (for example if you were using archive files and you have deleted or renamed the folder you were using), the software will look for the other SOURCE.

CHANGE FOLDER

Allows you to close the current archive folder (its contents are shown in the driver image window), and open another archive folder. Click this button to display a standard PC open file dialog box. Opening an archive folder opens all archive files in the same folder. This button is dimmed unless you select FOLDER as the SOURCE.

BALANCE

This option applies only to color images.

Select an option to correspond to the original lighting conditions under which you made the image. The option you select will be used for color correction by the driver when the image is acquired. The actions described in this section do not affect the images stored on the PCMCIA card or in archive folders; instead, these actions only affect the acquired image.

NOTE: If thumbnails or a preview are being viewed in color (you change to COLOR THUMBNAILS on the Control Panel), any changes you make in the BALANCE setting are immediately visible on the computer monitor.

The BALANCE popup menu provides the following choices.

DAY	Uses daylight color-correction values when acquiring the image.
TUNG	Uses tungsten color-correction values when acquiring the image.
FLUOR	Uses fluorescent color-correction values when acquiring the image.
FLASH	Uses flash color-correction values when acquiring the image.

. . . . . .

CLICK

Allows you to provide color balancing data by clicking on a white or light gray area of a thumbnail or a preview. CLICK is always the preferred option. After choosing CLICK, the mouse pointer becomes a crosshair. Click on a white or light gray area of the image (thumbnail or preview) that is not overexposed. White balance values are calculated based on the point at which you clicked. The values are used for color balancing this and subsequent images you acquire until you change the values by choosing CLICK or another item from the BALANCE popup menu.

When using CLICK, we suggest that you view the image you want with PREVIEW, which displays a larger image and therefore more easily allows you to find a white area that is not overexposed. With the image you want displayed in preview mode, and with CLICK chosen from the BALANCE popup menu, move the crosshair cursor to a white or light gray area. Move the cursor to a spot on the image where each of the red (R), green (G), or blue (B) color values displayed below the image are as high as possible, but lower than 255. After you click, you view the result of the change on the preview image.

NOTES: When you click, you may see the message: "ONE OF THE COLORS IS SATURATED. PLEASE PICK ANOTHER POINT FOR BALANCING." As prompted, click on another point.

If you are in thumbnail mode the crosshair cursor changes back to a pointer after one click; however, if you are in preview mode the cursor stays as a crosshair. Working in preview mode allows you to repeatedly use this option without the need to choose CLICK from the BALANCE menu after each click.

If there is no white or light gray area in the image, take a photograph of a neutral gray or white card (for example KODAK Gray

Cards, Publication No. R-27) under the same lighting conditions that existed when the image was taken. Use CLICK balance on the preview (or thumbnail) of this image to set color correction values for those lighting conditions; then acquire the desired image(s).

NONE — Uses a unity gain ("1" is used as the color correction value for red, green, and blue), for the color correction values when acquiring the image. This choice may be useful for images made under unusual lighting conditions when the other choices do not provide the desired results.

PREVIEW

Presents a single, enlarged version of the image — in color on a color monitor if the image is color — in the driver image window. You can scroll through images while in preview mode. Data displayed below the preview image indicate the image number, the current X and Y pixel location of the crosshair cursor on the preview image, and the red (R), green (G), and blue (B) values at the current cursor location.

(Refer to "CLICK" earlier in this chapter for an explanation of the use of PREVIEW with that feature.)

SELECT

Highlights images. (A narrow border surrounds highlighted images.) The buttons are useful for selecting images to delete, or to copy or move to the PC hard disk.

IMPORTANT: SELECT chooses images from the DCS 465 Camera Back PCMCIA card or archive folder, not just thumbnails in the driver image window. For example, suppose you click on LAST IMAGE and then click on DELETE. The action

does not merely delete the last image from computer memory, but in addition, these actions will delete the last image from the source (CAMERA or archive folder).

The three select choices work with images not currently visible in the image window. For example, clicking on ALL IMAGES selects thumbnails of *all* images, not only those visible in the image window; if you scroll the image window after clicking ALL IMAGES, you will see that all images are selected.

You can also select a single image by clicking on it. You can select multiple images by clicking on one image and then adding (or subtracting) from the selection by shift-clicking on other images (hold down the Shift key while you click on additional images).

Select choices are dimmed when PREVIEW is on, and also when there are no images on the PCMCIA card.

ALL IMAGES

Highlights all images. This choice is dimmed when there are no images available, for example when the PCMCIA card is empty.

LAST IMAGE

Highlights the last image. This choice is dimmed when there are no images available, for example when the PCMCIA card is empty.

NONE

Click on this button to deselect all highlighted images.

ACTION

Provides the following capabilities.

ACQUIRE

Allows you to acquire an image into your TWAIN-compliant PC application. This action does not affect the image at its source.

You only acquire image data. You do not acquire the thumbnail, or data from the INFO box. However, you can copy or cut text from the text box for the image, and after acquiring the image, you may be able to paste the text onto the image if supported by the application.

NOTES: You can also double-click on the thumbnail image (not the preview image) as an alternate to the two-step process of selecting one image and then clicking the ACQUIRE button. Images can be acquired while in preview or thumbnail mode.

The ACQUIRE button is dimmed until you select an image(s) or go to preview mode.

If it is supported by your TWAIN application, you can select more than one image before clicking ACQUIRE; each image will open into a separate window. To select multiple images shift-click (hold the Shift key down while clicking on images one after another) or click ALL IMAGES.

COPY TO FOLDER...

Copies highlighted images and associated sound files if any, whether currently visible in the image window or not, to the PC hard disk. Each image and sound file becomes a separate file on the computer hard disk. The SOURCE can be either CAMERA or FOLDER. A standard PC Windows save dialog box appears, although you do not supply filenames — the driver does that automatically. You can save the files only in existing directories or subdirectories. If needed, create these before entering the image window. Image data, a thumbnail, and all data from the "INFO" box are saved for each image.

NOTES: The COPY TO FOLDER button is dimmed until you select an image(s) or go to preview mode.

Do not take a new picture while an image is being copied to a folder.

Do not store TIFF files generated by software other than the DCS 465 in folders with DCS 465 images. Doing so may produce unpredictable displays of images in the DCS 465 image window.

Do not rename any DCS 465 generated TIFF or WAV files in DCS image folders. Doing so may produce unpredictable driver behavior.

MOVE TO FOLDER...

Performs the same function as COPY TO FOLDER, but in addition deletes the highlighted images and associated sound files if any (whether currently visible in the image window or not), from their source — a PCMCIA card or an archive folder on the PC hard disk. A dialog box provides you with the option of deleting the images.

NOTES: The MOVE TO FOLDER button is dimmed until you select an image(s).

Do not store TIFF files generated by software other than the DCS 465 in folders with DCS 465 images. Doing so may produce unpredictable displays of images in the DCS 465 image window.

Do not rename any DCS 465 generated TIFF or WAV files in DCS image folders. Doing so may produce unpredictable driver behavior.

Do not take a new picture while an image is being copied to a folder.

DELETE...

Deletes highlighted images (whether currently visible in the driver image window or not), from their source — either the PCMCIA card, or the archive folder. A dialog box warns you that images will be deleted.

NOTE: The driver DELETE button is dimmed until you select an image(s).

TAKE PICTURE

Issues a command that causes an electrically tripped camera to take a picture. To take a picture with this button the DCS 465 Camera Back must be connected to the computer, the SOURCE must be CAMERA (the TAKE PICTURE button is dimmed when the source is FOLDER), and your camera must be connected to the camera back. Additionally, if you are operating without a power winder, you must wind the film winder on your camera before clicking TAKE PICTURE.

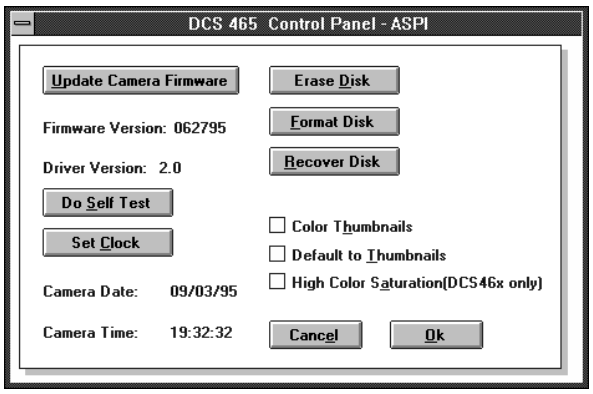
NOTE: You will not be able to take a picture while the camera back is accessing a PCMCIA card or while an Info box is open for an image.

CONTROL PANEL

Displays the following dialog box.

IMPORTANT: When the camera back is attached to the computer, if you hold down the Control key on your keyboard when you select the driver from the menu of your application, you will bring up this dialog box directly. This is particularly helpful if there are corrupt data on the PCMCIA card which prevent the normal dialog box from appearing. Using the Control key as described here brings you directly to this dialog box from which you can erase or format the hard disk or update camera back firmware.

If the SOURCE is FOLDER, the items in the box below related to the PCMCIA card (such as UPDATE CAMERA FIRMWARE or ERASE DISK), are not in effect and are therefore dimmed or do not appear.



UPDATE CAMERA FIRMWARE Select this choice to update the firmware in the camera back, the nonvolatile memory containing the control programming for the camera back. The firmware controls most of the features of the camera back.

When you click this button, the software driver looks for a "BIN" file (for example DCS465.BIN), which must be installed as described in chapter 5. The contents of the file are transferred into the firmware in the camera back. An error message is displayed if the required "BIN" file is not found.

This feature allows you to keep the firmware in the camera back up-to-date without sending the camera back to a service center, since new versions of the file that you may obtain can be copied to the camera back with this command. It also allows you to replace the firmware in the camera back with the same version if the firmware in the camera back is acting erratically.

If you are unable to open the driver (and therefore cannot access the Control Panel containing the button), hold down the Control key on your keyboard while accessing the driver from your application. This will bypass the normal access to the driver and will place you directly in the Control Panel from which you can click on the UPDATE CAMERA FIRMWARE button.

If you are working with a camera back that does not currently have a PCMCIA card installed, updating camera back firmware deletes the image in the camera back DRAM if one is present.

After clicking this button, if you see a message asking you to use the AC battery charger/adapter and to wait for several minutes, follow these instructions and wait (to allow the battery to charge) before clicking this button again.

FIRMWARE VERSION Displays the version of the firmware (control programming) in the camera back currently attached to the computer.

NOTE: This firmware version may be different from the firmware version displayed in an information box for an individual image. The version in the control panel is the version of the camera back currently connected to the computer. If a camera back with different firmware was used to produce an image, then a different firmware version will appear in the information box for that image.

DRIVER VERSION Displays the version of the software driver currently in use.

DO SELF TEST Click this button to perform a diagnostic self-test of the DCS 465 Camera Back. Messages inform you of the outcome of the self-test. These data can be helpful for field debugging before you call Kodak with a problem.

. . . . . .

SET CLOCK Click this button to set the date and time in the DCS 465 Camera Back. The date and time (in 24-hour format) are maintained in the camera back by the main camera back battery. When you click this button, the date and time are automatically retrieved from the PC system clock and copied to the DCS 465 Camera Back.

Each image is date and time-stamped when made. These data are shown when you display the information box for the thumbnail (or preview) of an image by clicking on the small square "INFO" box beneath the lower right corner of the thumbnail (or preview).

The date and time do not appear on the camera back LCD.

CAMERA DATE Displays the date that is currently stored in the camera back; this date becomes part of the date and time-stamp saved with an image and is displayed for each image in the image information box. If the control panel is not displaying the date "today," make sure that the PC system clock is accurate and then click on the SET CLOCK button to update this date from the system clock.

CAMERA TIME Displays the time that is currently stored in the camera back; this time becomes part of the date and time-stamp saved with an image and is displayed for each image in the image information box. If this is not displaying the current time, make sure that the PC system clock is accurate and then click on the SET CLOCK button to update this time from the system clock.

ERASE DISK Select this choice to erase the PCMCIA card in the camera back. This is the same as selecting all images from the image window and deleting them by clicking the driver DELETE button.

. . . . . .

FORMAT DISK Click this button to format the PCMCIA card in the camera back. This action is similar to formatting a floppy diskette or hard disk on your computer system. Existing images on the card are permanently erased and cannot be recovered.

If you are having unexplainable problems with the PCMCIA card (perhaps you are losing images, or you have been seeing an "E" followed by a single digit, for example "E2," on the camera back LCD), use this feature to reformat the PCMCIA card — all images will be lost — and try the card again.

RECOVER DISK Click this button to recover images that have been deleted from a PCMCIA card in the camera back. The images you recover may have been previously deleted with:

- The DELETE button in the software driver image window.
- The ERASE DISK button on the CONTROL PANEL of the software driver.

You cannot use this option to recover the images that were deleted when you formatted the card with the FORMAT DISK choice on the Control Panel.

When you click the RECOVER DISK button, every image location on the card is examined. The most recent image that was in each location is recovered.

The following examples explain the action of this button.

Example 1. Suppose that you have taken ten pictures and then deleted one. If you recover the PCMCIA card, you will have all ten images — the original nine images will still be there, and you will have recovered the tenth image.

Example 2. Suppose that you have taken ten pictures, have deleted three, and taken another picture. In this case, the newest picture overwrites one of the deleted images. If you recover the hard disk, you will obtain 10 images, nine original images, plus the latest picture you have taken. The exact location of the overwritten deleted image can not be predetermined. The picture you deleted that was overwritten with a new image cannot be recovered.

Example 3. Suppose that you have filled the PCMCIA card with images, and erased all images. If you recover the disk with this button before you take any additional pictures you will have recovered all of the images you erased.

Example 4. Suppose you begin with a blank PCMCIA card. Over time you have taken pictures, erased the disk, taken more pictures, deleted some, taken additional pictures, and so on — never having more than 20 images on the PCMCIA card. As you take new pictures while there are still active images on the PCMCIA card, the new images are written into an empty location on the PCMCIA card; deleted images that are overwritten become unrecoverable. Suppose you now delete all images and take three new pictures; the three new images will overwrite three images on the PCMCIA card. The exact location of the overwritten images can not be predetermined. If you recover the PCMCIA card, you will recover 20 images; the three new images plus 17 of the most recent 20 images.

COLOR THUMBNAILS Click this feature on (an X appears in the check box to the left of this option when on), to display thumbnails in color.

DEFAULT TO THUMBNAILS Displays thumbnails each time the driver is accessed, instead of using the previous display setting. When "on," if you exit from the driver while in PREVIEW mode, the next time you enter the driver, you will be displaying thumbnails instead of a preview image. This can be an advantage since thumbnails appear more quickly than a preview.

HIGHER COLOR SATURATION (DCS46X) ONLY When on (an X appears in the check box to the left of this option when on), a color saturation of 100% is applied; when off a color saturation of 85% is applied.

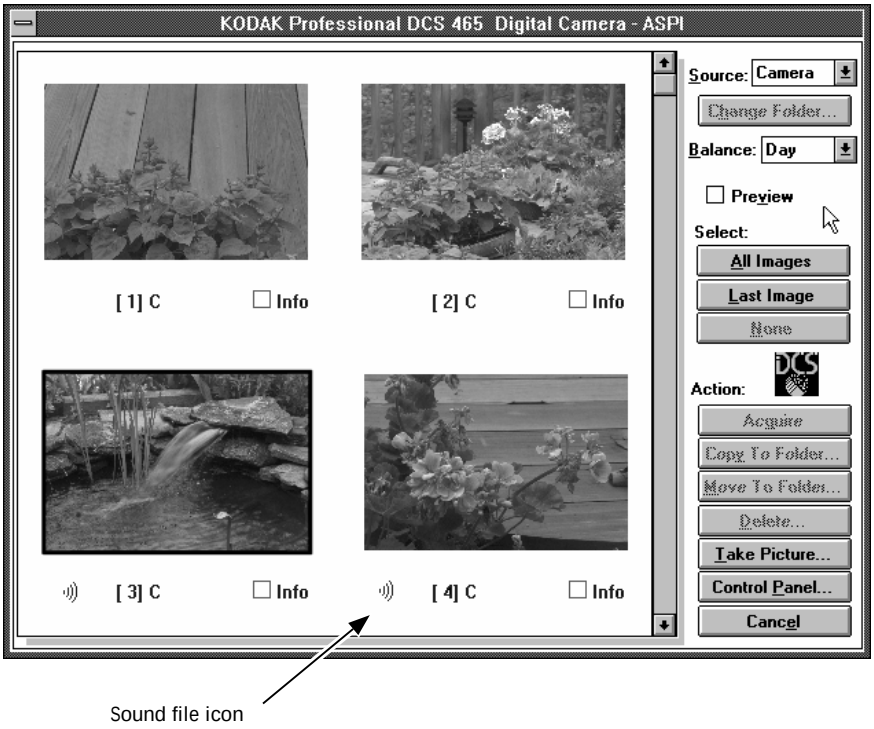
CANCEL Exits from the dialog box, canceling changes you may have made to the COLOR THUMBNAILS, DEFAULT TO THUMBNAILS, and HIGHER COLOR SATURATION choices. You can also press the Escape key to exit from the dialog box and cancel changes.

OK Closes the dialog box.

Saving Sound Files to Your Computer Hard Disk

A sound file(s) recorded with the camera back appears as a small icon below the lower left hand corner of an image thumbnail in the driver image window. When the image is copied or moved to a folder, the sound files associated with the image are also copied or moved, with each separate recording becoming a separate file on the computer hard disk. Up to 99 sound files can be recorded between two images.

Each sound file is saved as a ".WAV" file, the Windows standard sound file. These files can be played on your PC if you have a sound board installed on your PC. To play a sound, click on the sound icon and select the desired sound from the list that appears.


KODAK Professional DCS 465 Digital Camera - ASPI
Source: Camera
Change Folder...
Balance: Day
Preview
Select:
All Images
Last Image
None
Action:
Acquire
Copy To Folder...
Move To Folder...
Delete...
Take Picture...
Control Panel...
Cancel
[1] C
Info
[2] C
Info
[3] C
Info
[4] C
Info
Sound file icon

Creating Monochrome Images with Your Color Camera Back

You may be able to use your color camera back to create monochrome images. To do so, your PC application must include a feature to convert from color to monochrome.

For this section we include an example using Adobe Photoshop which has two methods you can use: convert to gray scale, and green channel.

Convert to gray scale. This is the preferred method, for it offers the best tonal rendition of the image, and should be used with color images that do not have high gain or noise levels. (High noise levels in images can be caused for a variety of reasons, for example by extended exposure times.) To use this method, acquire the image normally. Then choose GRAYSCALE from the MODE menu to discard the color information. You are left with the monochrome image.

Green channel. Use this method for color images that contain high noise levels. (High noise levels in images can be caused for a variety of reasons, for example by extended exposure times.) To use this method, set BALANCE to NONE in the driver, and then acquire the image. Then choose GREEN from the CHANNELS palette submenu. This produces a sharper image than reducing the other color levels to zero, since half of the pixels in the imager are green. As a result, the green plane has the most information when images are acquired in Photoshop.

Messages — Kodak Drivers for TWAIN-Compliant PC Applications

You use your TWAIN-compliant PC application to acquire images from the DCS 465 Camera Back; to do so, access the driver as described in chapter 5. The driver was designed by Kodak specifically for this purpose. That driver adds new messages to the application; an explanation of those messages — listed in alphabetical order — follows.

NOTES: For an explanation of other application messages, refer to the instructions for that application.

Message	Possible Cause	Suggested Solution
"A DCS Camera was not found. Try the following. Check all cables Check for SCSI ID conflicts Verify TWAIN driver matches installed SCSI board Check for dead batteries Switch to folder"	The SCSI cable is not connected properly.	Verify that the SCSI cable is connected properly between the computer and the camera back. If not, turn both off, reconnect them, and try again.
	The camera back SCSI ID is set improperly.	Reset the camera back SCSI ID so that it is different from other devices connected to the computer. To do so, turn off the camera back, then the computer. Reset the camera back SCSI ID. Restart.
	You have connected the camera back to a different computer (or to the same computer to which you previously connected an additional SCSI device), resulting in a SCSI ID conflict.	Reset the camera back SCSI ID so that it is different form other devices connected to the computer. To do so, turn off the camera back, then the computer. Set the camera back SCSI to a unique value. Restart.
	There is a dead battery in the camera back.	Operate from the AC battery charger/adapter or charge the battery from the adapter and try again. *(Continued on next page)*

Message	Possible Cause	Suggested Solution
(Continued from previous page) "A DCS Camera was not found. Try the following. Check all cables Check for SCSI ID conflicts Verify TWAIN driver matches installed SCSI board Check for dead batteries Switch to folder"	You have deliberately chosen the driver when no camera back was connected with the intention of working with images in an archive folder.	Click "Switch to Folder" and open an archive file from your computer hard disk.
	You may have both Future Domain and ASPI host adapters installed, and the camera back may not be connected to the host adapter selected as the TWAIN source.	Select a different TWAIN source or turn off all equipment and reconnect the camera back to the desired host adapter.
"An ASPI manager which does not support Windows is resident."	A problem has occurred with your software ASPI manager for Windows.	Install, or reinstall, the ASPI manager for Windows. This software, which is not available from Kodak, should be provided with your ASPI Windows host adapter card.
	One or more DOS ASPI manager(s) is installed and is in conflict with the Windows ASPI manager.	Be certain that a WINDOWS ASPI manager is installed; remove the DOS ASPI manager(s).
"An error occurred while deleting this image. Image may not have been deleted."	A problem occurred with the PCMCIA card.	Try again. If the problem continues, copy images from the PCMCIA card as needed and then reformat the card. If these actions do not resolve the problem, the card may be unusable, or there may be a firmware problem as described just below.
	A problem occurred with the camera back firmware.	First try the steps listed in the paragraphs just above. If these steps do not resolve the problem, update the camera back firmware and try again.

Message	Possible Cause	Suggested Solution
"An error occurred while erasing the DCS disk. All images may not have been deleted."	A problem occurred with the PCMCIA card.	Try again. If the problem continues, copy images from the PCMCIA card as needed and then reformat the card. If these actions do not resolve the problem, the card may be unusable, or there may be a firmware problem as described just below.
	A problem occurred with the camera back firmware.	First try the steps listed in the paragraphs just above. If those steps do not resolve the problem, update the camera back firmware and try again.
"An error occurred while formatting the DCS disk. This disk may not be usable. Please try formatting again."	A problem occurred with the PCMCIA card.	Try again. If the problem continues, the card may be unusable, or there may be a firmware problem as described just below. If these actions do not resolve the problem, the card may be unusable, or there may be a firmware problem as described just below.
	A problem occurred with the camera back firmware.	First try the steps listed in the paragraphs just above. If those steps do not resolve the problem, update the camera back firmware and try again.

Message	Possible Cause	Suggested Solution
"An error occurred while recovering the DCS disk. All images may not have been recovered."	A problem occurred with the PCMCIA card.	Try again. If the problem continues, copy images from the PCMCIA card as needed and then reformat the card. If all of these actions do not resolve the problem, the card may be unusable, or there may be a firmware problem as described just below.
	A problem occurred with the camera back firmware.	First try the steps listed in the paragraphs just above. If those steps do not resolve the problem, update the camera back firmware and try again.
"Are you sure you want to format this disk? If you proceed, all images or data will be deleted and cannot be recovered. This process will take several minutes."	You have clicked on Format Disk in the control panel.	Make the appropriate choice. If you continue, all images and other files will be erased and cannot be recovered.

Message	Possible Cause	Suggested Solution
"ASPI for Windows does not support this mode."	The ASPI manager does not support the current mode setting. This error may occur when Windows is running in Real Mode.	Run Windows in Enhanced mode.
"ASPI for Windows has not been initialized."	A problem has occurred with your software ASPI manager for Windows.	Install, or reinstall, the ASPI manager for Windows. This software, which is not available from Kodak, should be provided with your ASPI Windows host adapter card.
"Calibration file (...) is missing."	The driver does not find the calibration file for the camera back used to take this image.	You will not be able to display the thumbnail or preview for this image, nor will you be able to acquire this image, unless you have the calibration file for the camera back used to take this image. Reinstall it using the "KODAK ... Calibration ... Format" diskette. If this does not solve the problem and if your diskette does not have a .CAL file on it, contact Kodak.
"Cannot find file."	Your are trying to update camera back firmware, but the BIN file is missing.	Reinstall the driver software and try again.
"Cannot find *filename*."	You are trying to open an archive file that the driver cannot locate.	Try another drive, another directory, or another file.

Message	Possible Cause	Suggested Solution
"Cannot have same folder open for acquiring from and saving to."	While working with an archive folder (the Source is Folder), you have selected images, chosen "Copy to Folder" or "Move to Folder," and tried to save the images using the same filename as the opened archive file.	Try again, but this time create a new folder or use a folder other than the opened archive folder.
"Cannot locate the SCSI host adapter."	The driver does not find the SCSI host adapter.	You must have a supported SCSI host adapter installed to access files from the camera back. (Refer to chapter 1.) If necessary have a technician install this board, or perform troubleshooting on an already installed board.
"Cannot read *filename*."	An unusual condition was detected when trying to read this file, for example the file is in the wrong format.	Try again, and if unsuccessful and the file is known to be an image file, reinstall the driver. If problems persist you may be unable to access images from this folder.
"Cannot read *filename*, Invalid file format."	An unusual condition was detected when trying to read this file, for example the file is in the wrong format.	Try again and if unsuccessful reinstall the driver as described in chapter 5, then try again. If problems persist you may be unable to access images from this file.
"Cannot read PCMCIA disk in the camera."	The software driver is unable to read data from the PCMCIA card; perhaps the card was removed from the camera back just as the driver attempted to read it.	Be certain that the PCMCIA card is firmly seated in the camera back and try again.

Message	Possible Cause	Suggested Solution
"Cannot Take Picture at this time. Check the following. ► The camera back is busy. ► The camera cannot be electrically tripped."	You have tried a command (for example Copy to Folder), and the DCS 465 Camera Back is still performing another operation.	Wait for a short time (for example wait until the red Card Busy light on the camera back stops blinking), and then try again.
	Mechanically tripped cameras can not be tripped with the Take Picture button.	Take pictures using your cable release.
"Cannot Take Picture at this time. Disk is FULL."	The PCMCIA card in the camera system is full.	If available, replace the current PCMCIA card with another that has space for additional images. Or make room on the PCMCIA card currently in the camera back by saving images from the card to your computer hard disk with the Move to Folder command (which includes the option of deleting images after they are moved), or by deleting unwanted images from the card with the software Delete button. Or remove the card and, while connected to the computer with the driver image window opened, shoot single images which may be copied to a folder.

Message	Possible Cause	Suggested Solution
"Cannot Take Picture at this time. The battery is LOW."	The battery is low.	If you are operating while the AC battery charger/adapter is connected, wait for a short time and try again. If you are operating without the AC adapter but are in an environment where power is available, attach the adapter, wait for a short time and try again. If neither a power source nor an adapter is available, you will not be able to complete this operation. We encourage you to charge the battery for at least one hour before any field operations. The Specifications appendix provides the number of images you can expect from a fully charged battery.
"Cannot write *filename*. Check your disk space or write protection."	There is not enough room on the disk to save the file, or the device or media is write protected.	Choose another disk, or change the protection on this disk and try again.

Message	Possible Cause	Suggested Solution
"Command failure: Unable to free resource from global memory."	A problem has occurred with Windows.	Restart your computer and try again. If this does not resolve the problem, obtain technical support from your Windows supplier.
"Connect the battery charger, if it is not already connected, and wait 3 minutes. "If the charger is already connected, then wait 3 minutes before Downloading Firmware."	The battery does not have enough power to update the camera back firmware.	Allow the camera back battery to charge for three minutes from the AC battery charger/adapter, and then click Update Camera Firmware again.
"Could not acquire this image because informational data was invalid."	You have tried to acquire a blank image, or an image that has been corrupted.	Blank images cannot be acquired. Work with another image. If it is not a blank image, you may not be able to acquire this image.
"Could not save any images. All images had bad informational data."	You have tried to save a blank image, or an image that has been corrupted.	Blank images cannot be saved to an archive folder. Work with another image. If it is not a blank image, you may not be able to acquire this image.
"Data transfer from DCSxxx is incomplete."	There has been an interruption in data transfer between the camera back and the computer.	Verify that the SCSI cable is connected properly between the camera back and the computer. If not, turn both off, reconnect them, and try again.
"DCS (Digital Camera System) has been disconnected."	The camera back and the computer have been disconnected.	Turn off the camera back and the computer, reconnect them, and try again.

Message	Possible Cause	Suggested Solution
"DCS Hardware Error"	A problem with the hardware has been detected.	Verify that all SCSI connections are correct (if necessary turn off all equipment to alter the connections), make sure the camera back has a unique SCSI ID, and try again.
"Disk has been recovered successfully."	You initiated a disk recovery by clicking Recover Disk in the Control Panel. It was completed successfully.	No action is required.
"Do you want to delete ALL images in this folder?"	You are about to delete all images in the archive folder on your PC hard disk (not only the images in the image window).	Make the appropriate choice.
"Do you want to delete ALL images on the camera?"	You are about to delete all images on the PCMCIA card in the camera back (not only the images in the image window).	Make the appropriate choice.
"Do you want to delete these image(s)?"	You are about to delete all selected images. (The selection may include images not currently appearing in the image window).	Make the appropriate choice.

Message	Possible Cause	Suggested Solution
"File Error: Cannot find WINASPI.DLL."	The TWAIN compliant KODAK Driver for ASPI is installed, but a Future Domain SCSI Host Adapter and not an ASPI compliant host adapter is installed in the computer.	Reinstall the driver, following the directions in chapter 5, and install and select the TWAIN compliant KODAK Driver for Future Domain but not the TWAIN compliant KODAK Driver for ASPI.
		Obtain an ASPI compliant host adapter, have a technician install it, and then try again.
	The TWAIN compliant KODAK Driver for ASPI is installed, as is an ASPI compliant host adapter, but the Windows ASPI files that accompany the ASPI compliant host adapter are not installed.	Install the Windows ASPI files that accompany the ASPI compliant SCSI host adapter, then try again. If for some reason the Windows ASPI files were not supplied with your host adapter, contact the source of the host adapter to inquire about obtaining them. Even though you may have installed ASPI files for other operating platforms (for example for DOS), the Windows ASPI files must be installed to use the KODAK Driver.
"Firmware file for the camera is invalid."	A problem occurred when downloading camera back firmware.	Reinstall the TWAIN driver and try again to download camera back firmware. If the problem continues, and there are no other messages that provide help in this situation, contact Kodak.

Message	Possible Cause	Suggested Solution
"Firmware update has completed successfully."	You have clicked Update Camera Firmware and the update completed properly.	No action needed.
"Firmware update has failed."	You have clicked Update Camera Firmware in the Control Panel, but the update failed.	Wait 3 minutes and try again; if it fails again, reinstall the software driver as described in chapter 5, then try again.
"Format has completed successfully."	You have formatted the PCMCIA card.	No action needed.
"Illegal SCSI request reported by DCS camera."	A hardware error has been detected in the cabling or SCSI connectors.	Verify that all SCSI connections are correct (if necessary turn off all equipment to alter the connections). Try other cables if available. Be certain that terminators (if used with your computer setup) are still properly connected. Make sure terminator power is enabled on your SCSI card. If the problem persists, contact Kodak.
"Informational data not available for this image."	You have clicked on the Info box for a bad image.	Work with another non-blank image.
"Modified text cannot be saved to file because file is read-only. All modified text will be lost!"	You have typed text in the information box for an image in an archive file but the archive file is read-only.	Turn off the Read Only attribute property for this file and try again.
"More than one image was selected. Only the first one will be acquired."	You have selected more than one image and then clicked Acquire; this application does not support acquiring multiple images in the same action.	Click OK to acquire the first image of the selected thumbnails. Or click Cancel, select a single image, and then click Acquire.

Message	Possible Cause	Suggested Solution
"No ASPI managers for Windows were found."	A problem has occurred with your software ASPI manager for Windows.	Install, or reinstall, the ASPI manager for Windows. This software, which is not available from Kodak, should be provided with your ASPI Windows host adapter card.
"No images were recovered from the disk."	You have clicked on Recover Disk in the Control Panel but there were no images to recover.	No action needed.
"Not enough disk space."	There is not enough room on the disk to save the file.	Choose another disk, and try again.
"Not enough memory."	There is not enough memory to complete the operation.	Be certain that you have the minimum system requirements (refer to chapter 1). Shut down other applications if they are running.
"One of the colors is saturated. Please pick another point for balancing."	After choosing Click from the Balance menu you have clicked on an overexposed area of the image.	Choose Click again from the Balance popup menu and then click a white area that is not overexposed. (Refer to the explanation of Click on page 8-8; it describes using Preview with Click to avoid choosing an overexposed area.)
"Parity error detected during transfer."	A hardware error has been detected in the cabling or in the camera back.	Verify that all SCSI connections are correct (if necessary turn off all equipment to alter the connections). Try other cables if available. If the problem persists, contact Kodak.
"Self Test has completed successfully."	The self test is done.	No action needed.

Message	Possible Cause	Suggested Solution
"The Battery in the Camera is almost exhausted. Please connect the AC Adapter."	The battery needs charging.	If you are operating without the AC adapter but are in an environment where power is available, attach the adapter, wait for a short time and try again. If neither a power source nor an adapter is available, you will not be able to complete this operation. We encourage you to charge the battery before any field operations. The Specifications appendix provides the number of images you can expect from a fully charged battery.
"The camera is busy. Please try command again later."	You have tried a command (for example Copy to Folder), and the camera back is still performing another operation.	Wait for a short time (for example wait until the red Card Busy light on the camera back stops blinking), and then try again.

Message	Possible Cause	Suggested Solution
"The image file *filename* cannot be deleted because it is read-only."	The file is Read Only.	To delete the file, you must first use the File Manager to turn off the Read Only property attribute for the file.
"The last SCSI command completed with an error."	A hardware error has been detected in the cabling or SCSI connectors.	Verify that all SCSI connections are correct (if necessary turn off all equipment to alter the connections). Try other cables if available. Be certain that terminators (if used with your computer setup) are still properly connected. If the problem persists, contact Kodak.
"The matrix file *filename* is not compatible with the current TWAIN driver. Please reinstall the driver."	A problem occurred with the software driver, perhaps during installation.	Reinstall the driver as described in chapter 5, and try again. If the problem persists, obtain a new driver (refer to Appendix A), install it, and try again.
"The SCSI manager is busy and cannot handle the current request at this time."	A problem occurred when the software driver tried to communicate with the camera back.	Try again; if the problem persists, contact Kodak.
"There are no image files in this folder. To select another folder, click the Change Folder button."	The current folder, or a PCMCIA card in the computer drive, contains no images.	Select another folder or use a different PCMCIA card.
"There are no images in the camera."	The PCMCIA card in the camera back contains no images, or no card is present.	Insert a PCMCIA card into the camera back if one in not present, or insert another PCMCIA card known to contain images, or use the camera back to take pictures without a card in place.

Message	Possible Cause	Suggested Solution
"There is not enough memory to hold all the sounds for this folder. You will not be able to play the sounds for all images in this folder."	There is not enough memory available in your computer, and even the small amount of memory allocated for each sound by the TWAIN driver has exhausted available memory.	Divide the images in the folder, moving images for which there are sounds to a new folder.
"This camera or folder has more than 300 images in it. The driver can only display the first 300 images. To display the remaining images, use the Move command to move some or all of these images to a new folder."	A maximum of 300 images from a single folder can be displayed.	As prompted, divide the images in the folder, so that no more than 300 images are stored in any folder.
"This Driver is not compatible with the Camera. Please install a newer Driver."	An outdated or improperly installed driver is in use.	Install the newest driver and try again. Refer to the appendix "Updating Your Kodak Software Driver" for more information.
"This Driver is not compatible with this image. Please get a new Driver."	An outdated driver is in use.	Install the newest driver and try again. Refer to the appendix "Updating Your Kodak Software Driver" for more information.

Message	Possible Cause	Suggested Solution
"Timeout during Command phase." "Timeout during Data phase." "Timeout during Message phase." "Timeout during Selection phase." "Timeout during Status phase." "Timeout waiting for initial bus free phase."	A problem with the hardware has been detected.	For any of this group of messages, verify that all SCSI connections are correct (if necessary turn off all equipment to alter the connections), make sure the camera back has a unique SCSI ID, and try again.
"TWAIN DCSxxx source error. (Remaining wording of message varies)."	A problem has occurred with the software driver.	For any of this group of messages, try the operation again. If necessary, reinstall the TWAIN driver and try again. If the problem continues, contact Kodak.
"TWAIN DCSxxx source error. Low memory condition encountered. Free up some memory and try again."	There is not enough memory to complete the operation.	Be certain that the computer meets the minimum system requirements (refer to chapter 1). Shut down other applications if they are running and try again.
"TWAIN Error. Error accessing data source. Failure due to unknown causes."	A TWAIN-compliant KODAK Driver has not been installed or has been installed improperly.	Reinstall the driver as described in chapter 5 and try again.
"TWAIN Error. Error opening Data Source. Failure due to unknown causes."	A TWAIN-compliant KODAK Driver has not been installed or has been installed improperly.	Reinstall the driver as described in chapter 5 and try again.

Troubleshooting — Kodak Driver for TWAIN-Compliant PC Applications

Trouble	Possible Cause	Suggested Solution
The KODAK DCS 465 Camera choice does not appear in your software.	You have not installed the driver software.	Install the driver.
The time and/or date in the information box for an image(s) is incorrect.	The computer system clock from which the clock in the camera back was set, contained an incorrect time and/or date.	Reset the computer system clock. Connect the DCS 465 to your computer, run the driver, and reset the clock in the camera back using the Set Clock choice on the Control Panel.
	The battery has been dead for an extended period (perhaps a month or more) without recharging.	Recharge the camera back battery with the AC battery charger/adapter, and then reset the clock in the camera back using the Set Clock choice on the Control Panel.
You are unable to open the software driver when you choose its name in your application while the camera back is connected to the computer.	The firmware in the camera back has become corrupted.	Update camera back firmware as described earlier in this chapter.
The TWAIN driver is not working or not working properly.	There is insufficient RAM for the TWAIN driver.	Set the memory preference for your application (often found on the File menu) so that there is at least one megabyte of free RAM. (Some image editing software takes all available RAM by default at startup.)

Trouble	Possible Cause	Suggested Solution
You are experiencing erratic camera back behavior or unusual characters appear on the camera back liquid crystal display (LCD). You know the battery is charged.	The firmware in the camera back has become corrupted.	Update camera back firmware; if necessary use the control key to access the driver Control Panel as described in this chapter.
All acquired images have a consistent defect.	There is dirt or dust on the imager.	Clean the imager as described in “Cleaning the Imager” in chapter 9.
Acquired images have random defects, or there is other noise in the image.	The ISO setting is not supported.	Take the picture again with a supported ISO setting.
	You are using a SCSI cable longer than those supplied with the DCS 465 Camera Back.	Use only the supplied or specified cables.
	The exposure time is too long.	Avoid long exposures. Occasionally exposures of more than 1/2 second can produce noise in the image. (You cannot take exposures of more than three seconds.)
The PC crashes when the camera back is attached.	There is a SCSI ID conflict.	Reset the SCSI ID on the camera back as described in chapter 5.

Trouble	Possible Cause	Suggested Solution
The battery has become exhausted while the camera back is connected to the PC; the AC battery charger/adapter is not being used.	When the camera back is connected to a PC, and the software driver window is opened, the camera back will not go to sleep. This can exhaust the battery if it continues for an extremely long period of time (perhaps a month or more) without recharging.	Recharge the battery in the camera back. We recommend that you operate the camera back from the AC battery charger/adapter when connected to a PC.
You clicked the Take Picture button, but no picture was recorded.	The PCMCIA card in camera back is full (the disk indicator is flashing).	Delete images from the PCMCIA card, or use a different card if available.
You clicked the camera shutter but no picture was recorded	While connected to a computer with the driver running, an Info box for an image is opened.	Close the Info box and try again.

12

Appendices

This section includes the following appendices.

A — Updating Your Kodak Software Driver

B — Repacking Instructions for the KODAK Professional DCS 465 Digital Camera Back

C — KODAK Professional DCS 465 Digital Camera Back Problem Report Form

D — Optional Equipment and Spare Parts List

E — Specifications

F — Glossary

Appendix A — Updating Your KODAK Software Driver

This appendix provides information on obtaining and installing updated software drivers including:

- Directions for downloading software drivers electronically from several sources. (We recommend this as the preferred method of obtaining driver updates.)
- Directions for obtaining software drivers on diskettes directly from Kodak.
- Directions for installing the software driver and updating camera firmware once you have obtained the updated version of the driver.

Downloading Software Drivers Electronically

When Kodak prepares updated versions of the software drivers for the DCS 465 Camera Back, it makes those updates available electronically on several computer networks. Downloading an update from one of those networks is the quickest way to obtain the most current driver. You receive the driver directly — in a timely way — at your convenience.

Downloading a driver requires: a modem, communications software, a telephone line, and an account on a supported network. These items are not supplied by Kodak.

Kodak provides current versions of the drivers on the following networks; directions after the table describe how to download drivers from each of these network services.

Network	Description/Address
CompuServe	"Gives you access to over 1700 products and services, plus the knowledge and expertise of . . . CompuServe members worldwide." CompuServe 5000 Arlington Centre Boulevard PO Box 20212 Columbus, OH, 43220 Telephone 614-457-8600 and 1-800-848-8199
PressLink	"Designed to facilitate the electronic delivery of graphics, photos and information for the newspaper industry worldwide." PressLink, Inc. 11800 Sunrise Valley Dr., Suite 1130 Reston, VA 22091 Telephone 703-758-1740
AppleLink	"The official Apple on-line resource, global information network, and electronic-mail system for the Apple community." AppleLink, Apple Computer, Inc. PO Box 10600 Herndon, VA 22070-0600 Telephone 800-877-8221

Downloading a Driver from CompuServe

This section assumes that you have an account on CompuServe and that you are familiar with procedures to initiate and terminate a session on this network. If you need information on any of these topics, contact CompuServe at the address provided above.

There are a large number of communications software packages that you can use to access CompuServe. The instructions below assume that you are using either the Macintosh or Windows (PC) version of the software application "CompuServe Information Manager." If you are not currently using CompuServe and want to do so, you may wish to obtain and use this low-cost application which is widely available. If you are using another software product to access CompuServe, review the steps below; they provide information on the name and location of the file(s) you will need to download.

NOTES: The steps below were prepared using CompuServe Information Manager, Macintosh version 2.1.2 and Windows version 1.0.4. The screens were generated from the Macintosh computer version; similar screens appear on the PC.

1. Initiate a computer work session and run CompuServe Information Manager.
2. Follow these steps to enter the KODAK FORUM. (It may have a different name, for example KODAK CD FORUM.)
   A. Choose GO from the SERVICES menu.
   B. Type KODAK in the text box.

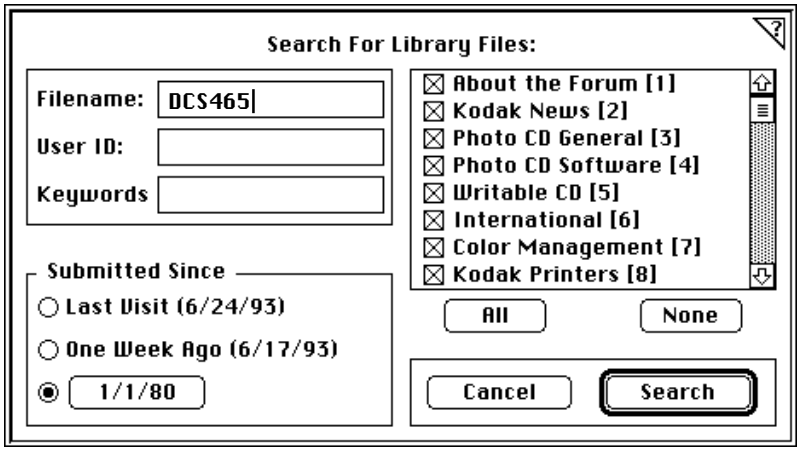
C. Click GO (Macintosh) or OK (Windows).

D. Wait as you are connected to CompuServe and transferred to the KODAK FORUM; if you are not a member of the forum, join the forum when prompted to do so.

3. Follow these steps to list all "DCS465" files.

A. Choose SEARCH from the LIBRARIES menu.

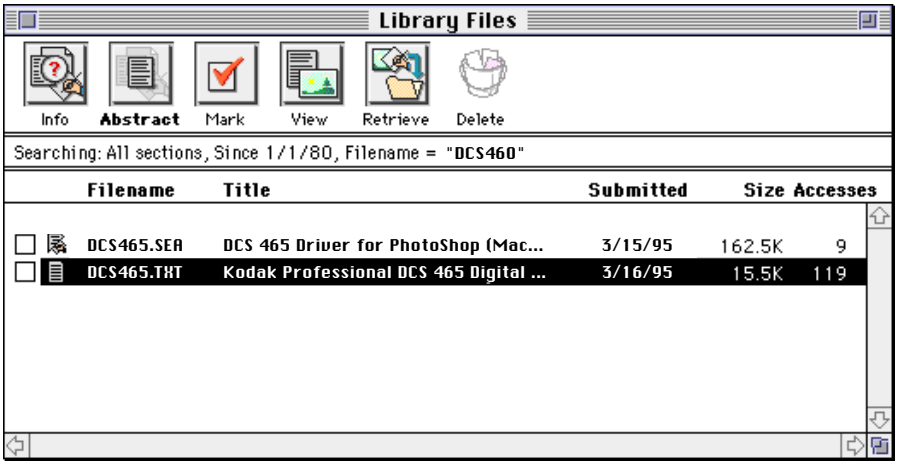
B. Type DCS465 in the filename text box.



C. Click ALL; this ensures that the search occurs in all library sections in this forum.

D. (Optional) Change the period of time to be searched.

E. Click SEARCH; you see a list of DCS 465 driver updates and other files.



F. Select the driver for Adobe Photoshop Macintosh computer or TWAIN if you are working on a PC.

NOTE: The files may have different names from those shown above.

4. Follow these steps to download the file to your hard disk.

A. Click RETRIEVE; you see a save dialog box.

B. Navigate through your hard disk as needed to choose a location to which the driver will be downloaded. (We suggest that you do not change the filename.)

C. Click SAVE (Macintosh) or OK (PC).

D. Wait as the driver is downloaded from the network to your computer; a progress box provides information on the download process.

5. Finish with other business on CompuServe as needed, and then terminate your work session.

Continue just below if you are working with the driver for Adobe Photoshop (Macintosh), or at "Extracting Driver Files for TWAIN (PC)" if you are working with a TWAIN-compliant application (PC).

Extracting Driver Files for Adobe Photoshop (Macintosh)

The data you have downloaded contains several files that have been combined and compressed into a single file. Compression results in a smaller file size — an advantage since it reduces the amount of time needed to transmit the data to your computer.

Now that you have downloaded the file, you must decompress it. However, the file is self-extracting, meaning that you do not need to obtain an additional software application to extract the files. You do not need to be connected to CompuServe while you complete the steps in this section.

Follow the steps below to expand the compressed data into the files you will need for the update.

1. Double-click the icon on your hard disk for the file you downloaded; it is probably named DCS465.SEA.
2. Read the information screen that appears and click CONTINUE.
3. A SAVE AS dialog box appears; navigate through your hard disk as needed to choose a location at which the extracted files — in a new folder — will be saved.
4. Wait as the files are extracted, and then click QUIT.

Continue at the end of this appendix at the section "Installing the Software Driver."

. . . . . .

Extracting Driver Files for TWAIN (PC)

The data you have downloaded contains several files that have been combined and compressed into a single file. Compression results in a smaller file size — an advantage since it reduces the amount of time needed to transmit the data to your computer.

Now that you have downloaded the file, you must decompress it. The file has been stored in ZIP format. To decompress it you can use the shareware version of PKUNZIP that is available on CompuServe and elsewhere. We assume that you have that application, which is commonly used with PCs. Rules regarding its usage are available with the application. (If you do not have that shareware file, use the file finder in the CompuServe IBM forum to find it, and then download that file.)

You do not need to be connected to CompuServe while you complete the steps in this section.

There are a variety of ways to extract the files; one follows.

1. Place the PKUNZIP application into the folder with the file you downloaded.
2. While in the Windows File Manager, drag the icon for the downloaded file — it is probably named DCS465.ZIP — over the PKUNZIP.EXE icon, but it may have another name.
3. Wait as the files are decompressed, responding to queries that may appear from the software.

   NOTE: When the process is complete, the contents of the window on your display may not be refreshed, meaning that you may not see the decompressed files. To view them, change to another directory, and then return to this one.)

Continue at the end of this appendix at the section “Installing the Software Driver.”

Downloading a Driver from PressLink

This section assumes that you have an account on PressLink and that you are familiar with procedures to initiate and terminate a session on this network. If you need information on any of these topics, contact PressLink at the address provided above. Separate directions are provided for obtaining driver files for Adobe Photoshop Macintosh and TWAIN-compliant applications (PC).

Downloading and Expanding Files for Adobe Photoshop (Macintosh)

1. Initiate a computer work session on the Macintosh computer and run your PressLink 2000 application.

   NOTE: The steps below were prepared using PressLink 2000, version 6.1.4, while running System 7.1 on a Macintosh computer.

2. Navigate to the location of the driver by opening the following folders.

   A. Open VENDORS. The folder is located in the PRESSLINK™ 2000 SERVICES window; you may need to scroll to locate the folder.

   B. Open EASTMAN KODAK.

   C. Open TECH SUPPORT.

   D. Open MACINTOSH UTILITIES.

3. Open the driver you want. The driver may be named DCS 465 MAC, or it may be stored with a different name.

4. Follow these steps to download the file to your hard disk.
   A. Click the DOWNLOAD icon; you see a SAVE AS dialog box.
   B. (Optional) Navigate through your hard disk as needed to choose a location to which the file will be downloaded.
   C. Click OK.
   D. Wait as the file is downloaded from the network to your computer; a progress box provides information on the download process.
5. Choose DISCONNECT from the NETWORK menu. You leave the network, but remain in the PRESSLINK 2000 application.
6. Click on the EXPAND icon at the top of the driver window.
7. Follow these steps to expand the files you have downloaded.
   A. Click on the filename on the left side of the window.
   B. (Optional) Change the name of the folder to which the files will be expanded.
   C. (Optional) Navigate through your hard disk as needed to choose a location to which the folder with the files will be expanded.
   D. Click SAVE ALL.
   E. Wait as the data are expanded; a progress box provides information on the expand process.
8. Quit the PressLink application.

Continue at the end of this appendix at the section “Installing the Software Driver.”

Downloading and Unpacking Files for TWAIN (PC)

1. Initiate a computer work session on the PC, run your copy of PressLink System 2000 for Windows, and connect to the host.

   NOTE: The steps below were prepared using PressLink System 2000 for Windows, version 1.1.2, while running Windows version 3.1.

2. Navigate to the location of the driver by opening the following folders.

   A. Open VENDORS.

   B. Open EASTMAN KODAK.

   C. Open TECH SUPPORT.

   D. Open DOS UTILITIES.

3. Click on the driver you want. The driver may be named DCS465PC.PKG, although it may be stored with different names at different times.

4. Follow these steps to download the file to your hard disk.

   A. Choose GET ATTACHED FILES from the INFO SERVICES menu (or click on the ATTACHED FILE button).

   B. (Optional) When you see the GET ATTACHED FILES dialog box, navigate through your hard disk as needed to choose a location to which the file will be downloaded.

   C. Click SAVE.

   D. Wait as the file is downloaded from the network to your computer; a progress box provides information on the download process.

   E. Close the FILE TRANSFERS dialog box.

5. Choose DISCONNECT from the NETWORK menu. You leave the network, but remain in the PRESSLINK SYSTEM 2000 application.
6. Follow these steps to unpack the file you have received.

   NOTE: The data you have downloaded contain several files that have been compressed and packed into this single file. Compressing the data results in a smaller file size, an advantage since it reduces the amount of time needed to transmit the driver files to your computer. Now you must unpack these data.

   A. Choose PACK/UNPACK FILES from the FILE menu.
   B. Navigate through your hard disk to locate the package you downloaded.
   C. Click on the package file name; it is probably DCS465PC.PKG.
   D. Click SELECT PACKAGE; at the bottom of the dialog box you see a listing of the individual files that compose the package.
   E. Click UNPACK.
   F. Navigate through your hard disk as needed to choose a location to which the file will be unpacked.
   G. Be certain that the option to unpack ALL FILES is selected.
   H. Click OK.
   I. Wait as the files are unpacked one-by-one; a progress box provides information on the process.
7. Quit the PressLink application.

Continue at the end of this appendix at the section “Installing the Software Driver.”

Downloading a Driver from AppleLink

This section assumes that you have an account on AppleLink and that you are familiar with procedures to initiate and terminate a session on this network. If you need information on any of these topics, contact AppleLink at the address provided above. Only the driver for Adobe Photoshop Macintosh is available on Apple Link: the driver for TWAIN-compliant applications is not available.

1. Initiate a Macintosh computer work session and run your AppleLink application.

   NOTE: The steps below were prepared using AppleLink, version 6.1.

2. Select APPLELINK SERVICES from the WINDOWS menu.
3. Navigate to the location of the driver by moving into the following folders.
   A. Open SOFTWARE SAMPLER.
   B. Open 3RD PARTY DEMOS/UPDATES.
   C. Open SOFTWARE UPDATES.
   D. Open COMPANIES E-J.
   E. Open EASTMAN KODAK.
4. Open the current version of the DCS 465 file.

   NOTE: That object may have a different name, for example it may be named DCS465 PHOTOSHOP PLUG-IN VERSION 3.0.

5. Follow these steps to download the file to your hard disk.
   A. Click the DOWNLOAD icon; you see a SAVE AS dialog box.
   B. Navigate through your hard disk as needed to choose a location to which the file will be downloaded.
   C. Click OK.

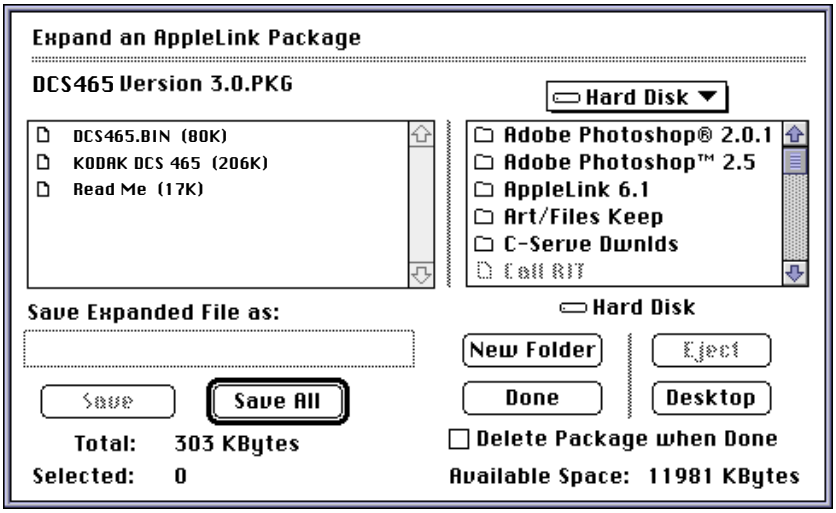
D. Wait as the file is downloaded from the network to your computer; a progress box provides information on the download process.

6. Finish with other business on AppleLink as needed, and then terminate your work session.

Expanding Driver Files for Adobe Photoshop (Macintosh)

The file you have downloaded is a single package containing several data files. You must now follow the steps below to expand the data you have downloaded. You do not need to be connected to AppleLink while you complete the steps in this section.

1. Double-click the icon on your hard disk of the file you downloaded. (Perhaps it is named DCS465 PHOTOSHOP PLUG-IN VERSION 3.0.)
2. You see an AppleLink screen like the following. Note in this example that the package contains three files (shown on the left of the dialog box) retrieved for the DCS 465.



3. Navigate through your hard disk (on the right of this dialog box) as needed to choose a location to which the extracted files will be saved.
4. Click SAVE ALL.
5. Wait as the files are extracted.
6. Choose QUIT from the FILE menu.

Continue below at the section "Installing the Software Driver."

Obtaining Software Updates Directly from Kodak

You can order diskettes containing current versions of the KODAK Driver for Adobe Photoshop Software Macintosh and/or the KODAK Driver for TWAIN-compliant software. Refer to the "Software Package" entry in the appendix "Optional Equipment & Spare Parts List" for ordering information.

If you obtain software directly from Kodak, install it as described in the next section.

Installing the Software Driver

This section describes how to update the driver on your hard disk, and how to update the firmware in your camera using the updated driver files.

The section assumes that you have downloaded and expanded driver files from one of the three networks as described earlier in this appendix, or that you have received a new diskette from Kodak with these files.

Updating the KODAK Driver for Adobe Photoshop Software (Macintosh)

1. Complete all the steps in "Installing the KODAK Driver for Adobe Photoshop Software on Your Macintosh Computer " in chapter 4, except as noted here.
   - Since you will be replacing files with new versions, you may wish to save the older versions of the files by copying them to a backup diskette.
   - If the files have been downloaded from a network (instead of obtained on a diskette), use the downloaded files from their location on your hard disk rather than from the diskette.
   - When you copy the new files to the appropriate location on your hard disk, you may be prompted to confirm that you want to replace the existing files. After backing them up, as suggested just above, you can replace the files.
2. Access the new driver by completing all the steps in "Accessing the KODAK Driver for Adobe Photoshop Software (Macintosh)" in chapter 4.
3. Update your camera with the new firmware by completing all the steps in "Updating DCS 465 Camera Back Firmware" in chapter 4.

   The software and camera are now ready for use.
4. Exit the driver and quit Photoshop.

Updating the KODAK Driver for TWAIN Software (PC)

1. Complete all the steps in "Installing the KODAK Driver for use with TWAIN-Compliant Software" in chapter 5, except that if the files have been downloaded from a network — instead of obtained on a diskette — access the files from the location of the downloaded data rather than from the diskette.
2. Access the new driver by completing all the steps in "Accessing a KODAK Driver for TWAIN-Compliant PC Applications" in chapter 5.
3. Update your camera with the new firmware from the diskette by completing all the steps in "Updating Firmware in the DCS 465 Camera Back" in chapter 5.

   The software and camera are now ready for use.
4. Exit the driver and your application.

Appendix B — Repacking Instructions for the KODAK Professional DCS 465 Digital Camera Back

If you are having difficulties using your KODAK Professional DCS 465 Digital Camera Back, **please contact a Kodak representative before returning your unit for service**. (In the United States, call Kodak at 1-800-23-KODAK (1-800-235-6325). In Canada call 1-800-GO-KODAK (1-800-465-6325); in other countries, call your nearest Kodak representative.) If service is required, your Kodak representative will instruct you how to return the unit to the nearest service center for repair and will issue a return authorization number.

Also, please make sure that you have filled out and returned your Warranty Registration card; warranty service will not be provided without return of the Warranty Registration card or dated proof of purchase.

Please follow these instructions if you need to repack your camera back to ship it for repair. Be sure to use the original shipping carton and packing materials. (If the original packaging has been discarded or is not available, packing will be at the owner's expense.)

For system testing and calibration after repair, **all major system components (DCS 465 Camera Back, cables, and AC battery charger/adapter) must be returned together.**

IMPORTANT: DO NOT PACK YOUR CAMERA, LENSES, SOFTWARE, OR MANUALS.

1. Fill out the enclosed KODAK Professional DCS 465 Digital Camera Back Problem Report Form (Appendix C). Be certain your return address is complete.
2. Disconnect all cables from the DCS 465 Camera Back.

3. Remove the DCS 465 Camera Back from your camera.
4. Cover the imager on the camera back with the imager cover.
5. Insert the DCS 465 Camera Back into the static shielding bag and seal the bag with tape.
6. Place all other major system components (see above) into their appropriate locations within the original shipping carton.
7. Place the completed Problem Report Form (Appendix C) on the top of (inside) the shipping carton.
8. Close and seal the shipping carton with tape.
9. Ship as instructed by your Kodak representative.

Appendix C — KODAK Professional DCS 465 Digital Camera Back Problem Report Form

Customer Return Address

Name _____

Company _____

Address _____

_____

_____

City _____ State ____ Zip _____ — _____

Phone ( ) _____

Equipment Description

DCS 465 Camera Serial Number — _____

(See the data label on the top of the DCS 465 Camera Back.)

Problem Description

_____

_____

_____

_____

_____

_____

Appendix D — Optional Equipment & Spare Parts List

Ordering Optional Kodak Equipment from Your Dealer

To order items in this category, contact your dealer. For product information, including detailed information on options and accessories, and to obtain catalog numbers where not provided, in the United States call 1-800-23-KODAK (1-800-235-6325), in Canada call 1-800-GO-KODAK (1-800-465-6325), and elsewhere contact your local Kodak representative, except as noted below.

NOTE: None of the items described in this section is supplied with the DCS 465 Camera Back. The Read Me file on the supplied software driver diskette may provide revisions or additions to this material.

Item Name	CAT No.	Description
Removable media	865 6019	Supported PCMCIA card.

NOTE: For product information on any of these printers, in the United States call 1-800-23-KODAK (1-800-235-6325; in Canada call 1-800-GO-KODAK (1-800-465-6325); in other locations contact your local Kodak representative.

Item Name	Description
KODAK XLS 8400 PS Printer	Prints 300 pixels per inch, 24-bit color images up to 8.5 x 12-inches (21.6 x 30.5-cm) to KODAK EKTATHERM XLS print paper or transparencies using ADOBE POSTSCRIPT Level 2.
KODAK XLS 8600 (raster) and XLS 8600 PS (raster and Adobe Postscript Level 2) Printers	Prints 300 pixels per inch, 24-bit color or eight-bit grayscale images up to 8.5 x 12-inches (21.6 x 30.5-cm) to KODAK EKTATHERM XLS print paper or transparencies using KODAK EKTATHERM XTRALIFE ribbons. (The ribbon — available in color or black — incorporates a laminate patch that protects a finished print from fingerprints. The patch gives prints additional light-fade stability and prevents dye from transferring to PVC sleeves and folders.) Print time for the XLS 8600 is 1.7 minutes or less at maximum image area including EKTATHERM XTRALIFE (3.6 minutes or less for a transparency).
KODAK XLT 7720 Digital Continuous Tone Printer	Prints 203 pixels per inch. Prints black and white or color reflective prints and transparencies, with output sizes of 8.5 x 11-inch (21.6 x 27.9-cm) or 11 x 11-inch (27.9 x 27.9-cm).

Ordering Optional Equipment from Other Vendors

Item Name	Description
Software Drivers	You may be able to obtain software drivers prepared by companies other than Kodak that enable you to use the camera on computer platforms in addition to the Macintosh. You may also be interested in developing your own software driver. For information contact Kodak.

Ordering Spare Parts from Kodak

To order any of the following spare parts for your DCS 465 Camera Back, call Kodak Parts Services at 1-800-431-7278 (fax 1-716-588-3051).

Part Name	Part No.	Description
Hasselblad Focus Screen	3B5466	Focus screen
Mamiya RZ Focus Screen	3B5461	Focus screen
Mamiya RB Focus Screen	3B5460	Focus screen
Macintosh Computer Cables	966156	25-pin to 25-pin SCSI cable
	966157	25-pin to 50-pin SCSI cable
IBM/Compatible PC Cables	953867	50-pin to 25-pin SCSI2 cable for use with the Future Domain SCSI Host Adapter
Gender Changer	966976	Macintosh SCSI gender changer for use with the Macintosh IIfx or PowerBook computers. This item is not supplied with the DCS 465 Camera Back.
SCSI Terminator	692480	50-pin SCSI terminator for Macintosh computers except the IIfx. This item is not supplied with the DCS 465 Camera Back.
25-pin Terminator	966158	25-pin pass through terminator.
AC Battery Charger/Adapter	3B4701	AC battery charger/adapter

Part Name	Part No.	Description
Accessory Adapter Cable	3B4045	This multipurpose 1-to-3 connector/splitter allows you to use the AC battery charger/adapter with other accessories as available.
Software Package		We encourage you to obtain software updates electronically as described in “Appendix A — Updating Your Kodak Software Driver” in this manual. However, you can also order them as below.
	3B5647	Driver for Macintosh Adobe Photoshop
	3B5447	Driver for TWAIN (3.5 inch diskette)
Filter Glass	3B4878	KG5 filter glass
Imager Cover	3B4880	Imager cover
Imager Retainer	3B4883	Imager retainer

You can order the following DCS 465 Camera Back accessories from Digital and Applied Imaging Marketing Support (DAIMS) Customer Service. Call 1-800-535-4633 Monday to Friday between the hours of 9:00 a.m. and 5:00 p.m. eastern time zone.

Cat No.	Description
8472854	Hasselblad Accessory Kit Includes Hasselblad focus screen and Hasselblad adapter
1703438	Mamiya RZ Accessory Kit Includes Mamiya RZ focus screen, Mamiya RZ adapter, and Mamiya RZ trip cord
1271238	Mamiya RB Accessory Kit Includes Mamiya RB focus screen and Mamiya RB adapter
8656019	PCMCIA Drive Accessory Kit
8276347	Camera Sync Cord
8641573	Push-button Release Cord
8209397	Camera Trip Mechanical (CTM)
1390897	Mamiya RZ 67 Trip Cord

Ordering New Manuals from Kodak

To order an additional user's manual, call Kodak Advertising Distribution 8:00 a.m. to 5:00 p.m. (eastern time zone), Monday through Friday, at 1-800-233-1650 (fax 1-716-588-4807).

Part Name	Part No.	Description
User's Manual	8B4724	KODAK Professional DCS 465 Digital Camera Back User's Manual

Appendix E — Specifications

KODAK Camera Back

- 3060 x 2036-pixel charge coupled device (CCD) full-frame imager, resulting in images composed of 6.0 megapixels of data. Acquired color images are 18 megabytes (MB) and acquired monochrome images are 6 MB.
- Twelve bits/color.
- Takes one shot every eight seconds.
- Supports an ISO of 80 for a color camera back, and 160 for a monochrome camera back.
- Sixteen megabyte dynamic random access memory (DRAM) buffer.
- Built-in microphone records sound in ".WAV" file format at "radio quality"— 8-bits, 11 kilohertz, monaural.
- Built-in, liquid crystal display (LCD) status display.
- Two external controls:
  1. Set SCSI ID.
  2. Set ISO.
- PCMCIA-ATA Type III slot designed to accept PCMCIA hard disk cards that support the PCMCIA "ATA" interface.
- SCSI 25-pin, female, subminiature D connector with standard pin assignments for Macintosh II computer.
- Multipurpose 7-pin mini-din connector (for the AC battery charger/adapter).
- Single, rechargeable nickel hydride battery; a fully charged battery provides power for up to 150 frames.
- Kodak universal digital camera back mount. Allows camera back to be oriented horizontally or vertically.

- KG5 built-in replaceable filter glass.
- Camera Sync 4-pin mini-din connector.
- Electrically tripped camera (Elec Cam Trip) 3-pin mini-din connector.
- Shutter release 5-pin mini-din connector.
- Flash sync standard connector.
- Support for selected electrically tripped and mechanically tripped cameras.
- Third-party, optional, PCMCIA hard disk cards. (A 170 megabyte model stores up to 26 images.)

Software Driver

- Driver (plug-in) for use with Adobe Photoshop (Macintosh) image-editing software and drivers for use with TWAIN-compliant PC applications.

Other

- Universal AC battery charger/adapter, 95-250 V AC, 47-63 Hz. Safety: UL, CSA, TUV.
- Dimensions: 6.25 in. (15.9 cm) high x 6.00 in. (15.2 cm) wide x 3.00 in. (7.6 cm) deep.
- Weight: approximately 2.10 lbs. (0.953 kg). Includes KODAK camera back; excludes recording media and cables.
- Operating temperatures: 32˚ to 130˚ F (0˚ to 55˚ C). Third-party, optional PCMCIA cards may have more restrictive operating temperature ranges.
- Operating humidity: 8 to 85% relative humidity non-condensing. Third-party, optional PCMCIA cards may have more restrictive operating humidity ranges.

Appendix F — Glossary

This section provides brief explanations of terms used in conjunction with the DCS 465 Camera Back. Refer to these items individually in the Index in this manual to find additional reference material about the following terms.

AC battery charger/adapter. This unit provides a continuous source of power to the DCS 465 Camera Back, with sufficient power to support continuous operation of the camera back as well as to continue charging the camera back battery.

Access. Reach the driver image window by making the appropriate choice from a menu of your image editing application.

Accessory adapter cable. Provides the ability to use simultaneously the AC battery charger/adapter and future accessories as available.

Acquire. Move image data into an image editing application from a PCMCIA card, or from an archive folder on your hard disk, or from the dynamic random access memory of a camera connected to a computer without a PCMCIA card. As the image is acquired, the color correction values associated with the current balance selection are applied to the image data.

Archive. An image copied or moved from the camera back to the hard disk on your computer.

Archive folder. *See* Image archive folder.

Balance. Balance, a feature on the driver image window, allows you to indicate the original lighting conditions under which you took the picture. Your selection is used for color correction by the software driver when the image is acquired into your image editing application.

BIN file. This file contains firmware, the control programming used by the camera back. You copy — download — this software from your computer hard disk into the camera back when you click the UPDATE CAMERA FIRMWARE button. Downloading firmware is a one-time action. (You do not need to repeatedly copy the firmware each time you use the camera back. Instead, you only download firmware the first time you use the camera back, and then when you receive firmware updates or if you are experiencing erratic problems with the camera back.)

Camera back. *See* KODAK Camera Back.

Card busy light. A red light labeled CARD BUSY that blinks on the back of the KODAK Camera Back when data are being read from or written to the PCMCIA card, for example just after you take a picture, or when you move data from the camera back to a computer. Do not remove the card when this light is blinking or you may lose the current image or other images as well.

CCD (charge coupled device). The type of imager inside the KODAK Camera Back.

Color balance. *See* Balance.

Control panel. A window displayed by the driver when you click the CONTROL PANEL button of the driver image window. It incorporates a variety of product features, for example format disk and recover disk, as well as preferences, such as default to color thumbnails.

Download firmware. *See* BIN file.

DRAM (Dynamic random access memory). Memory in the camera back used to hold an image when taken before it is transferred to a PCMCIA card or to your computer. The DCS 465 Camera Back includes eight megabytes of DRAM.

Driver. The software provided by Kodak as part of the DCS 465 Camera Back that allows you to access the camera back from your computer. It also allows you set camera back defaults, to test the camera back, to update the camera back, to manage images you may have moved or copied to your computer hard disk, and so on. Also called the "Photoshop driver" or "plug-in."

Driver image window. The window displayed by the driver in which thumbnails or larger previews of your images appear. The window also displays controls that allow you to manipulate images.

Dynamic random access memory. *See* DRAM.

Firmware. Camera back control programming. *See also* BIN file.

Frame counter. The frame numbering system provided by the camera back. The frame counter increases by one as each picture is taken. The frame counter appears within brackets beneath each thumbnail or preview in the driver image window. This is a different number from the frames remaining indicator described just below.

Frames remaining. A number on the camera back LCD that indicates the number of additional pictures that can be stored on the PCMCIA card currently in the camera back. This is a different number from the frame counter described just above.

Image archive folder. Folders on the hard disk on your computer in which archive files are stored.

Imager. The light sensitive object positioned within the camera back that collects light striking it when the shutter of your camera is released.

Info box. A window, appearing when you click on “Info” beneath the thumbnail or preview of an image, that displays a variety of data about the status of the camera back when the image was taken.

KODAK Camera Back. A sealed, one-piece unit produced by Kodak, to which your camera is attached. The camera back includes the hardware features of the DCS 465 Camera Back.

LCD. The liquid crystal display on the camera back displaying status and control information.

PCMCIA card. “Standard,” removable credit-card sized cards that meet the Personal Computer Memory Card International Association standard, that are used with the camera back for image storage.

Photoshop driver. The software provided by Kodak as part of the DCS 465 Camera Back that allows you to access the camera back from your Macintosh computer. It also allows you to set camera back defaults, to test the camera back, to update the camera back, to manage images you may have moved or copied to your computer hard disk, and so on.

Plug-in. Another name for the driver software. *See also* Driver.

Preview. A single, large representation of one image that fills the image area of the driver image window.

Preview mode. The state of the driver image window when Preview is on and a single large image is displayed, as opposed to thumbnail mode, which displays multiple smaller images in the driver image window.

Self test. A feature of the driver found on the Control Panel that allows you to perform a diagnostic self-test of the DCS 465 Camera Back.

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Throw. The distance the pin extends from the end of the cable release when you fully depress the cable release button.

Thumbnail mode. The state of the driver image window when Preview is off and multiple thumbnails are visible, as opposed to preview mode when Preview is on and a single large image is displayed.

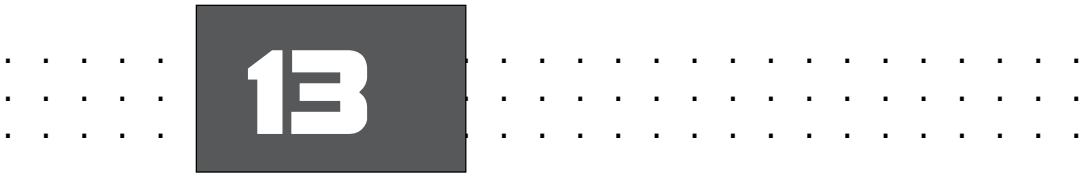
Thumbnails. Small representations of images that appear in the driver image window. A thumbnail is a subsample of the data in the full image, with data sampled from every sixteenth pixel of the full image.

TWAIN. A set of written specifications developed by a consortium of vendors, that when implemented in software allows you to acquire data from a peripheral (such as a digital camera or film scanner) directly into your software application (such as an image-editing software) without leaving the application.

TWAIN driver. The software provided by Kodak as part of the camera that allows you to access the camera from your PC. It also allows you set camera defaults, to test the camera, to update the camera, to manage images you may have moved or copied to your computer hard disk, and so on. Another driver, the "Photoshop driver" provides similar access on the Macintosh computer platform.

Update firmware. The process you follow to move firmware — the camera back control programming — from your computer to the camera back. *See also* Bin file.

WAV file. The Windows standard sound file format used by the camera back to save recorded sounds.



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